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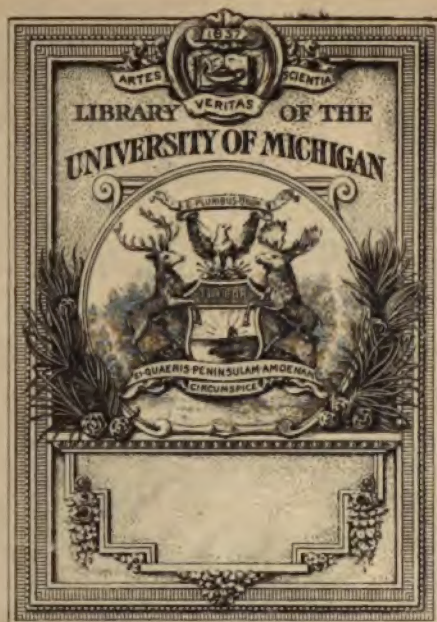
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**THE**  
**ECLECTIC REPERTORY**

**AND**  
**ANALYTICAL REVIEW,**

**Medical and Philosophical.**

**EDITED BY A SOCIETY OF PHYSICIANS.**

.....*Apis matineæ*  
*More modoque.*—*HOR.*

*Nallis unius disciplinæ legibus adstricti, quibus in philosophia necessariò paremus, quid sit in quaque re maxime probabile semper requiremus.*—*CIC.*

**VOL. VIII.**

**PHILADELPHIA:**  
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Eastern District of Pennsylvania, to wit :

..... BE IT REMEMBERED, that on the ninth day of November,  
: SEAL : in the forty-third year of the Independence of the United States of  
: America, A. D. 1818, Thomas Dobson & Son, of the said District,  
..... have deposited in this office the title of a book, the right whereof they  
claim as proprietors, in the words following, to wit:

"The Eclectic Repertory and Analytical Review, Medical and Philosophical. Edited  
by a Society of Physicians.

.....Apis matins  
More modoque.—Hor.

Nullis unius disciplinæ legibus adstricti, quibus in philosophiâ necessariò paremus,  
quid sit in quaque re maxime probabile semper requiremus.—Cic.

Volume VIII."

In conformity to the act of the Congress of the United States, intituled, "An  
act for the encouragement of learning, by securing the copies of maps, charts, and  
books, to the authors and proprietors of such copies, during the times therein  
mentioned."—And also to the act, entitled, "An act supplementary to an act, en-  
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charts, and books, to the authors and proprietors of such copies during the times  
therein mentioned," and extending the benefits thereof to the arts of designing,  
engraving, and etching historical and other prints."

D. CALDWELL,  
Clerk of the Eastern District of Pennsylvania.



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THE  
ECLECTIC REPERTORY  
AND  
ANALYTICAL REVIEW,

MEDICAL AND PHILOSOPHICAL.

Edited by a Society of Physicians.

PUBLISHED BY THOMAS DOBSON AND SON, PHILADELPHIA.

\* \* As a considerable number of the first volume of the Eclectic Repertory are deficient in not having the original Prospectus, this paper is now re-printed for the accommodation of those who have not before received it.

OF all the means which have been devised to disseminate information, that of a Periodical Journal is, perhaps, the best adapted. The utility of such publications is, indeed, very decisively evinced by the encouragement which they receive among every people at all distinguished by an attachment to letters. It is, however, in the United States, where access to the stores of learning is impeded by peculiar obstacles, that they seem to be more especially required, and to hold out the greatest advantages. Easy of circulation, they reach the remotest portions of our wide spread territory, and open, at a very moderate expense, a source of amusement and instruction, which to many would otherwise be denied. Nor is the salutary influence of these popular vehicles any longer with us, than in Europe, a matter to be determined by experiment, or the results of the future. Effects, the most beneficial to our literary relations, can already be traced to their rapid multiplication, and extensive dispersion. They have insinuated into the minds of our people, who were once, confessedly, too negligent of liberal pursuits, a love of knowledge; and have made us, what, in the lan-



## PROSPECTUS.

guage of a celebrated foreigner we have truly become of late, one of the most *inquisitive and reading nations of the earth*.

Dispositions in every view so auspicious, were to be anticipated from the diffusion of writings so eminently calculated to captivate general attention, and to delight or improve every description of readers, every class of society, every variety of taste, and every gradation of intellectual capacity.

As its title indicates, the Journal now offered to the patronage of the public, will be conducted chiefly on the principle of *selection*. The leading feature of the plan, more distinctly enunciated, is to present, at stated intervals, a sort of synopsis of the foreign Magazines, Journals, and Reviews appropriated to Medicine and its kindred sciences.

Whatever may be thought of the *humility* of this design, no one will doubt of its importance who is conversant with the periodical works of Europe. As is incident to such publications, the matter which they contain is altogether of a mixed nature, and of merits the most unequal. They are a vast field, where golden wheat is too often choked by useless or pernicious tares, and where it imports us, like the prudent husbandman, to reject the one, and hoard the other. These publications are, moreover, at this time, so numerous, so costly, and so difficult to be procured, that really they can only be consulted, by a large majority of the cultivators of science in the United States, through a medium somewhat similar to the one now proposed. It is therefore meant to give an extract so copious of their contents, as not only to exhibit the progress of the physical sciences abroad, but to do away, in a great degree, the necessity of recurring to the works themselves.

This Journal however is not wholly to be restricted to the province of selection. A department, sufficiently spacious, will be reserved for *original* contributions. But as eclectics, the editors must be permitted here also to exercise the right of choice, and, without arrogance or captiousness, of excluding such articles as they may deem unworthy of preservation. They will cordially receive, and conspicuously insert, reports of interesting cases of disease, well written histories of epidemics, accurate meteorological observations, experimental inquiries, ingenious disquisitions, notices of new discoveries,

## PROSPECTUS.

acute but temperate analyses of books; and, in short, whatever in their estimation may have a tendency to enlarge the sphere of science; and more particularly, to rectify the errors, amend the practice, and increase the usefulness of that branch to which they are professionally devoted.

The contents of the Journal will be arranged under the subsequent divisions:

- |  |  |
|--|--|
| 1. Selected Papers.                        | 4. Original Papers.                                |
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THE  
ECLECTIC REPERTORY  
AND  
ANALYTICAL REVIEW.

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VOL. VIII.

JANUARY, 1818.

No. I.

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SELECTED PAPERS.

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*On the Internal and External use of the Nitro-Muriatic Acid,  
in the Cure of Diseases.* By H. SCOTT, M. D.

[From the Medico-Chirurgical Transactions, Vol. VIII. Part. 1.]

I HAVE been assured by several members of this society, of which I have the honour to be an associate, that some account of the way in which I have long been in the habit of employing the nitro-muriatic acid, would be acceptable to this learned body. Such an account has become the more necessary, as many persons have begun to employ the remedy in question with little information as to its effects or its management. It is capable of producing more remarkable changes in the human body, and with less disturbance of its functions, than any other substance with which I am acquainted.

I had not been long in India before I had reason to think that the oxides of mercury were of the utmost importance in the treatment of many diseases of that climate, such as chronic and acute hepatitis, dysentery, flux, asthma, and of some other complaints. I became convinced, for instance, that in obviating abscess of the liver, we can trust to nothing but the mercurial preparations. Whenever the habit is impregnated with mercury to a certain degree, which the state of the sali-

vary glands, and other constitutional effects, sufficiently indicate, the patient remains quite free from the danger of abscess. I have long thought that when such a misfortune does occur, it is to be attributed to want of medical skill, or to the application of the remedy at too late a period, after some change of structure, necessarily ending in abscess, had taken place. Though blood-letting, blistering, purging, together with the other parts of the antiphlogistic treatment, may occasionally be useful, they are not to be put in competition with a proper use of the oxides of mercury, without which we can seldom remove any severe affection of the liver, whether it be acute or chronic.

Entertaining this opinion of mercurial preparations, I was yet very frequently much dissatisfied with their effects. Patients labouring under hepatitis were often freed from the risk of abscess; but a state of such extreme weakness, perhaps, had been induced by the disease, or by the remedies employed to subdue it, that, on a recurrence of the disorder, they resolved to endure all the miseries attending it, rather than return to a treatment which they had found to be so distressing. In this resolution they might persist for a time, but at last would fly to the remedy as a less evil than that by which they were kept in a state of suffering so exquisite and so hopeless.

In my first trials with the nitric acid as a substitute for mercury, and indeed for a number of years, I used the acid procured from impure Bengal saltpetre, by means of alum. The acid thus obtained was really a mixture of the nitric and muriatic acids, the latter being derived from the muriates of soda, of lime, and of magnesia, with which that salt is so largely contaminated. I long believed that all the good effects, which I saw this acid produce, arose from the *nitric acid* alone, and I took measures at last to get it in a state of very considerable purity\*. In the effects, however, of my purer acid, I was sadly disappointed; for although it did by no means cease to produce some salutary consequences, yet they were less decisive, less valuable, and of a different kind. I now reflect with satisfaction, that I published at that time an account of my mate-

\* See No. II. of the Journal of Science and the Arts, 1816.



rials and my process, so that the public had the same means of forming a judgment, that I myself possessed.

In a paper on the nitric acid, printed in India, in the year 1796, and reprinted in London, I gave an account of my process, and of the materials used for obtaining it, to which I added the following words. "As the nitre that I have used contained about six per cent. of sea salt," (here I seem to have taken no account of the other muriates,) "it will be evident that the acid which I obtained is not a pure acid of nitre, but it is a mixture of the acid of nitre and oxygenated muriatic acid, or it is an aqua regia, in which the marine acid bears a small proportion to the acid of nitre; as this is precisely the case with the acid of nitre from Apothecaries' Hall, with the effects of which I was well acquainted from experience, I was less anxious to separate from my nitre the whole of the marine salt. This is the acid that I used in all my trials. It is more agreeable to the taste than the acid of Europe, and more salutary, if I mistake not, in the living body."

I left India in very bad health, and long remained ill in this country. During this period I often reflected on my experience with the acids, and resolved, as soon as an opportunity should occur, to return to the use of the nitro-muriatic acid, and to satisfy my mind on the subject from further observation. Above a year ago I came to London, and had an opportunity of getting the nitro-muriatic acid employed to a considerable extent. At first, I mixed three parts of nitrous acid with one of muriatic, in order to imitate the acid I had used in India. Of late, however, I have employed the acids in equal weights, and I give a preference to this proportion; but there may be others still more efficacious which time will discover.

Although I had reason in India to be satisfied with the general effects derived from this acid, yet considerable inconvenience attended its internal use. If it were not given with great caution, it injured the enamel of the teeth, though not their roots, as mercury does. Even in small quantities, it disagreed with some stomachs, and few individuals indeed could continue it sufficiently long, or in a sufficient quantity to remove from the system the symptoms of secondary syphilis. These difficulties made me anxious to ascertain whether or not the acid

externally applied would produce good effects. I accordingly employed it in this manner in various cases,\* and I immersed my own body up to the chin in a bath of this acid, sufficiently diluted with water. I fortunately have preserved the memoranda that I made at the time, of which the following is a copy.

"*Bombay, 27th April, 1798.* I bathed to-day in an acid bath, which was merely acidulous. It covered the whole body below the head. I staid in it for half an hour, and it was nearly of the temperature of the body. I feel no particular effect from this bath. It is fully as pleasant as water, and cleanses the skin like a soap.

"*April 28.* I bathed again to-day, keeping the bath at the same temperature, or making it rather higher, and of the same strength with regard to acid. I staid in it half an hour. I still feel no material effect from the bath. Pulse after bathing  $76^{\circ}$ . The only apparent action of the acid is on such animal matters as are unprotected by life, with which it forms an acid soap. Would it not deprive feathers of their oily smell?

"*29th.* Bathed again, and continued as before for half an hour in the bath. To-day the bath was hardly so hot as the body. About half an hour after bathing yesterday, I became sensible of an odd sensation about my gums, my jaws, and my teeth.

"*30th.* Bathed again, and staid half an hour in the bath. It was rather warmer than my body. Since yesterday I have been sensible of some uneasiness in my throat on swallowing. I feel a disposition to salivation at times, but I am otherwise well. My gums both above and below, are somewhat reddened. I was for some time disposed to ascribe these effects to imagination, but they have continued all this day, and leave me no doubt of their reality. I am in good health.

"*May 1st.* Since yesterday I have felt some pain in my throat, especially on swallowing. This pain seems to follow the course of the œsophagus. During the whole of this forenoon I had a sense of *burning* over the roof of my mouth, and down the gullet. This sensation is like what arises from hav-

\* See a letter published in July 1797, and republished in Dr. Beddoes's Collection.



ing chewed an acrid vegetable substance, and is so unpleasant, that unless it leave me by to-morrow, I shall bathe no more. To-day I bathed as usual, staying in the bath for half an hour. It has been to-day, and in general, so acid, as to make my skin smart a good deal in many places.

"2d. My mouth, &c. though not in the least ulcerated, is somewhat pained. I am sufficiently convinced of the great power of this bath, and shall bathe no more. My digestion is improved, and I feel that my liver, unclogged by disease, is doing its office with facility, which for some time past has not been the case with me.

"6th. I have not bathed again, but I still feel the effects of the bath in my mouth. My appetite is now good, and I sleep with tranquillity, which I had not done of late. With all this my pulse is quicker than usual, and I am sensible of some degree of languor. It is, however, to be observed, that the weather is very hot; the thermometer being, during the day, in the shade, from 92 to 96 degrees of Fahrenheit.

"In order to get a delicate test for acidity or alkalescency, I have been accustomed to rub the red petals of the *hibiscus rosa sinensis* on white paper, where they leave a blue-coloured stain. I observed when under the influence of the bath, the urine no longer turns this colour red, but destroys it altogether.

"June 6th. For a fortnight after giving up the bath, I was sensible of some of its effects about my mouth, and my pulse remained too quick. I am now remarkably well. My liver seems to be sound, and I have experienced a happier change than I ever did from mercury."

After this I used the nitro-muriatic bath in a variety of cases, and often with agreeable results. I now wrote another letter, giving an account of its powers: this letter was published in London, but it attracted very little attention, being tried by few individuals. When I came to London, and had it in my power to have the nitro-muriatic bath employed for various states of disease, I was, as may be supposed, very anxious to know if it could be as commonly applicable in this climate as it is within the tropics. I have been much pleased to discover that it gives here the very same results that I formerly derived from it; nor are the maladies for which it may bring re-

lief, less general in this country than in India. On the contrary, they seem to be still more abundant.

The acid that I have used of late is the nitro-muriatic; and it is formed by mixing together equal parts of the nitrous, or nitric acid, and muriatic acid. If these acids be in the state of concentration that they usually possess in the shops, and if the quantities be considerable, a great volume of gas is evolved on their coming into contact, which taints every part of a house, is extremely hurtful to the lungs, and disagreeable to the smell. To avoid all this inconvenience, I put a quantity of water, at least equal in bulk to both the acids, into a bottle, and I add the acids to it separately. This method does not only prevent the unpleasant odour, but it tends to retain the chlorine on which its effects depend. It is well known that the nitro-muriatic acid acts very readily on the metals and earth; nothing therefore but glass, or extremely well glazed vessels of porcelain, should be used to contain it. Wooden tubs for bathing answer very well, and they should always be made *as small as possible*, compatible with their holding the body, or the limbs that we wish to expose to the bath. From their being small we save acid, and are able to heat the bath with ease. In India I have often exposed the whole body below the head to this bath; but here I have been satisfied in general by keeping the legs and feet exposed to it. In order to warm the baths after the first time, I have commonly made a third or a fourth part of it be thrown away, and the loss replaced by boiling water, and a proportional quantity of acid. To save the expenditure of acid, I have occasionally warmed a portion of the bath in porcelain vessels placed near the fire, but I fear this may diminish its effects.

It is no easy matter to give directions with regard to the degree of acidity of the bath. I have commonly made it about as strong as very weak vinegar, trusting to the taste alone. The strength should be regulated by the degree of irritability of the patient's skin. I may say, that although I like to know that it is strong enough to prick the skin a very little, after being exposed to it from fifteen to thirty minutes, yet I believe that even such an effect as this is unnecessary.

The time, too, of remaining in the bath, in order to produce



the greatest effect, is a matter of doubt; I have kept the legs and feet exposed to it for half an hour or more; but with more delicate people not above one-half, or one-third of that time. I have repeated these baths daily, or even twice or thrice a day.

I must now observe that the mere sponging the skin with nitro-muriatic acid, sufficiently diluted with water, gives rise to the very same effects with bathing, and is more easily applied. Fifteen or twenty minutes may be employed in the sponging, though I have found that a much less time does produce very material effects. When the bathing or sponging is carried to a considerable extent, and when the system is much under its influence, a sense of weakness comes on occasionally, some nervous irritation and restlessness are felt, a taste of metal (generally compared to that of copper) becomes sensible; a sense of pain occurs in some part of the palate or mouth, which is not permanent, but comes and soon goes off again. At length little specks or small ulcerations, extending no deeper than the cuticle, are seen on the interior surface of the mouth, and over the tongue, so that some degree of excoriation or rawness is at last produced. This is attended by a considerable discharge of saliva, with an increase of the feeling of lowness or depression. These effects resemble those of mercury, but they are not the same. The excoriation from the nitro-muriatic acid never reaches deeper than the cuticle: it never gives rise to fœtid ulceration of any kind; nor does it produce the least offensive smell of the breath nor in the mouth. The effects of it in this way are surprisingly fugitive. At one hour the discharge of saliva may be excessive; the next it will stop, and perhaps suddenly come on again. The excoriations in the mouth generally go away in a day or two, if the remedy be discontinued, and appear no more. While the mouth in this way is affected by the acid, the teeth partake of uneasiness; but I never saw this in a considerable degree, nor have I known any injury done to the teeth or their sockets.

These last-mentioned effects are seldom met with to the extent that I have described, and need not be excited unless some peculiar circumstances require an unusual power, such as the symptoms of syphilis. I have lately added more and more

of the muriatic acid in proportion to the nitric, and the effects have proportionally increased. I now make use of equal parts of the acids. Would not the greatest power of the remedy be obtained by those proportions that produce the greatest quantity of chlorine; for from that element I believe all its effects arise? I am yet ignorant what effects would be produced by the muriatic acid alone.\*

The nitro-muriatic acid appears in a particular manner to affect the glands, and to alter their secretions; and on this power a great part of its value in derangements of the liver seems to depend. It sometimes very suddenly increases the secretion of bile; and this effect may be kept up for a length of time. It increases the perspiration, and often to a great extent. Whether the nitro-muriatic acid be applied to the inner surface of the stomach, or to the external surface of the body, the effect is the same in kind, though not in degree. As a very general rule for its employment, it may be observed, that whenever the mercurial preparations are indicated the nitro-muriatic acid will be found useful, with this difference, that in cases where mercury is highly injurious from delicacy or peculiarity of constitution, or from other causes, the nitro-muriatic acid may be employed with safety and advantage. On the other hand, I should not at present recommend it in acute diseases, with the exception of some kinds of fever, and of hepatitis of every character. Where the pulse is quick, and where there is an inflammatory tendency, I think it would be injurious.

I was first led to the use of the nitro-muriatic acid from an attention to the diseases of the liver. The derangements of that organ, and of its secretion, open a vast field for inquiry, which has been but imperfectly explored. I shall, as an example of the application of the nitro-muriatic acid, say a few words on this important subject.

#### *Acute and chronic Hepatitis.*

With regard to acute hepatitis, if pure and unmixed, the propriety of employing the nitro-muriatic acid might admit of

\* Since I wrote the above, some of my friends as well as myself have used, for sponging the skin, chlorine dissolved in water, and with the same effects exactly as arise from the union of the acids.



a doubt; but the same observation may be applied to mercury. I think, however, that I never met with a case of acute hepatitis, that did not partake of the chronic affection, either at its commencement or soon afterwards. I know from experience that within the tropics, where I lived so long, a proper use of mercury is never to be neglected in either affection of that organ. I have not trusted to the acid where I thought the risk of abscess considerable; but without delay have employed mercurials, and every other means in my power to prevent, if possible, a termination so lamentable. I should now not hesitate to add this new power to the other means; and have no doubt, if really insufficient of itself, it would greatly aid us in affording security and relief.

Chronic hepatitis is a far more common disease, than the acute; but it may be considered as always partaking of the nature of both. One portion of the same liver is often insensible, enlarged, and inactive, while another part of it is suffering from all the symptoms of acute hepatitis, and going on to the formation of pus. It is this mixed disease that we meet with so generally in India, as well as in this country; and it is this state of the liver which gives rise to so great a variety of anomalous symptoms.

For this chronic affection, it appears to me, that the nitro-muriatic acid applied to the skin, is the most effectual and the safest remedy. A few hours, or even a single hour, will sometimes bring relief; but it is necessary to continue the remedy till the system be sufficiently affected by it, and to repeat it occasionally *till the patient has recovered his usual degree of strength*. This is a rule in affections of the liver, of the utmost importance. A state of weakness, however produced, is the great remote cause of those chronic affections; so that we may remove the disease, but till the strength and vigour of the circulation be restored, we have no security against a return of it.

This affection of the liver produces a vast variety of diseases, to which various names have been assigned. To describe them well would require much time, and occupy many volumes. The process of digestion has an intimate connection with the bile; if this be depraved, the stomach and intestinal canal par-

take immediately of the disorder. The brain, which seems to be the source of feeling and motion, is connected by means of numerous nerves with those abdominal viscera, by which so many of the functions of life are carried on. A diseased state of the bile has a wonderful influence on the whole nervous system: it gives rise to pain and giddiness of the head: a great dislike to motion, and a sense of weakness, rather than actual weakness: cramps come on in the legs while asleep: the soles of the feet are tender and painful, and at times the sick rather drag them than raise them when they walk. A most able and intelligent friend, who was lately relieved very suddenly by the nitro-muriatic acid bath, from a state of long continued nervous irritation, is of opinion, that all the misery he had suffered for years arose from a depraved state of the biliary secretion. His observations on himself are curious and very important. He had long taken notice that the bile, though at times ample in quantity, was insoluble in water, and that the *fæces* had lost entirely the *fæcal* odour. The solubility in water, with this peculiar odour, gradually returned from the use of the remedy, while at the same time the irritable state of the nervous system was suddenly corrected. But I think there is sufficient evidence that this acid in some cases acts directly on the nervous system; for in some people I have seen it very suddenly produce a sense of composure, of quiet and of happiness, and for days together they have been sensible of a degree of an agreeable intoxication.

There are other symptoms, though less obscure, perhaps, in their origin, that are often connected with the chronic affection of the liver. The blood cannot pass through it with the facility necessary to health, nor is it possible to relieve it effectually from such a state, but by giving solubility to the bilious matter. It then passes off abundantly through the proper channels into the duodenum. If from obstruction or enlargement the blood be prevented from circulating with ease in the liver, a general disorder of the whole frame becomes apparent. The feet and ankles swell, and a fulness in the head comes on, with head-ache and giddiness, and a train of unhappy feelings. In this country it is a common practice to have recourse to the abstraction of blood by cupping, or by the lancet, in order to



alleviate such symptoms. The first effect of this practice is, no doubt, occasionally to give relief to the head; but this is only temporary. An equal quantity of blood is again accumulated; a repetition of blood-letting is required; the state of weakness continues to increase; and the patient falls a victim at last to an injurious practice, derived from a theory altogether erroneous. It is not by letting off a part of the blood, that we can do any good; for it is neither too abundant in quantity, nor bad in quality. The fulness of the head, as well as of the feet, does really arise from the remora to the blood in another portion of its circuit; and in both extremities of the body it is produced by one and the same cause.

I need hardly say that melancholy and despondency of mind are often connected with a peculiar state of the bile, for this has been observed in all ages. This state of mind I have often seen removed by a proper use of the nitro-muriatic bath; and people of both sexes have assured me that they think it had preserved them from the crime of suicide, to which, during the horrors of their feelings, they had an alarming tendency.

That state of bile already mentioned, in which it seems to be deficient in quantity, and probably at the same time unhealthy in its nature, is very common. Of all hepatic affections, I think this attended with the most pain and distress of the bowels. This disorder of the biliary system frequently gives rise to a flux, which I have known to go on for many months, and even for years. I have generally seen a deficiency of bile without a tendency to flux, and often even accompanied by a constipated state of the *primæ viæ*. Such a condition of the liver and bile does frequently give rise to most uneasy derangements of the stomach; a tendency to acidity or heart-burn; little ulcerations over the surface of the mouth and œsophagus, and perhaps extending downwards through the whole track of the intestinal canal. This aphthous disease is very distressing and dangerous, though I have been very successful in curing it by the nitro-muriatic acid. I know of no other remedy for this affection of the stomach and intestines, as the common means of cure seem to me to be very far from sufficient.

I may say with truth, that in such a condition of the liver



and bile, all remedies that stimulate or excite the circulation are *injurious*. Among such I may reckon wine, spirits, bark, bitters, and steel. With such agents opium has been classed; but many of its effects are peculiar to itself, and a proper application of it in such complaints is often of the utmost importance and utility. In almost every state and stage of diseased liver, opium may be given to many with benefit. Even in acute hepatitis it answers a salutary purpose when combined with calomel, or with the quicksilver pill: for unlike what occurs in other inflammatory affections, it seems in those of the liver to be unattended by almost any ill effect. In chronic hepatitis, it alone is able to calm the irritability and unhappy feelings, and to allow time for the application of the means of cure. It seems, indeed, by its sedative power, to have a beneficial influence on the liver, and perhaps to do something more than produce a temporary calm. Opium, however, should never be given in chronic hepatitis, without great attention to its effect in diminishing the propulsive motions of the *primæ viæ*. I have been accustomed to give an opiate at bed-time, together with some laxative substance, such as the sulphate of magnesia, to correct its constipating effect.

It is proper to observe, that bilious people, and especially those who have been subject to intermittents, after finding the utmost relief from mercury, or the nitro-muriatic acid, and at the moment when we think they are advancing fast towards a perfect recovery, are apt, all at once, to say they are unwell; to lose their appetite, to become a little feverish, and to complain of their head. If these symptoms be neglected, the patient soon gets regular attacks of a quotidian fever, beginning with a cold fit, and followed by the ordinary stages of that disease. Such is the connection which a great flow of bile, however excited, appears to have with fever of the intermittent kind.\*

\* Although I have not seen this fever under a violent form, yet it is depressive and inconvenient. It is easily stopped by the Peruvian bark, taken daily in decoction, before the hour of the fit, and repeated at the same time for a few succeeding days. A common wine glass full of it, every two hours, and repeated for three or four times before the fever is expected, I have always found to be sufficient for curing it. With some people, I judge it prudent to give the bark decoction during the whole of the time they use the

Besides this fever, which is of the true intermittent kind, there is very generally a troublesome symptomatic fever, that plagues bilious people. It steals on imperceptibly, and, when once begun, gives rise, with little other inconvenience, to a state of most obstinate sleeplessness. This too may be obviated by an opiate, given before the hour of its accession; but it can be cured only by correcting the cause of it. Opiates with bilious people are very apt to occasion great itching of the skin, by delaying the passage of the bile through the bowels.

From a diseased state of the bile the memory is often affected, and a degree of stupidity, and even of idiocy comes on. From this cause too, the hair at times grows harsh and hard to the feeling, and I have seen it, like the skin, become soft and flexible from the use of the nitro-muriatic acid. In both cases I imagine that the effect arises from the long suppressed matter of perspiration being abundantly restored. To all these I may add another inconvenient complaint from a bilious state, a frequent desire to pass the urine. Whether this irritation arise from a diseased sensibility of the whole nervous system, or from a morbid alteration in the urinary fluid, I do not know.

In all biliary derangements the rule is never to be forgotten, and I repeat it again, that *there is no security against a relapse, till the health and strength are fully restored; and that till then, some repetitions of the remedy are necessary.*

The good effects of the nitro-muriatic practice can never be appreciated, until it has been discontinued for several weeks or rather months. During the use of the bathing or sponging, the pulse is often very quick, and patients grow thinner, even when they feel better. At times, too, they often complain of more than usual uneasiness in the liver, or in the region of it; they often lose their flesh, and look very yellow. The remedy seems to alter and agitate that organ. The flow of bile, when once excited, goes on for a number of days; and not, with some people, without inconvenience. If it do not affect the bowels as a laxative, it is highly necessary at this time to employ some substance that has this power, such as the sulphate of

acid. It is often very useful to add a few drops of laudanum to each glassful of the bark decoction.



magnesia, senna or aloes. In time, however, it is commonly found that the health, the strength, and the colour of the skin are much improved.

It is no small advantage of this practice, that we can apply the power in as high a degree as the strongest can bear, or in quantities so minute, that the most sensitive and nervous being can hardly be injured by it. I have immersed many to the chin in this bath, and I have been afraid, in other cases, to wet more than a single hand with the acid. The length of time, too, that the acid remains in contact with the skin, may be infinitely varied. We have thus a power extremely divisible, and applicable to almost every degree of resistance or sensibility.

When the acid produces very considerable effects, it is right, after a few days, to stop its use for a week or two; as, if used long, it gives rise to unnecessary uneasiness from bilious discharges or bilious feelings. I have said that drinking the nitro-muriatic acid has the very same effects with its external use. When taken in this way, it should be very much diluted with water. Indeed it should taste but very slightly acid, and be drank in small portions at a time. I need hardly say, that it is very necessary to take care that, even in this weak state, it be not allowed to touch the teeth. The mouth should be immediately washed after swallowing it, and every precaution employed, that is used with the mineral acids, to prevent injury from its external action. This way of using the nitro-muriatic acid is often very convenient and salutary, and in many cases may deserve a preference to any other. I think it is particularly applicable to some states of indigestion, and when we wish to produce effects gradually and insensibly.

On what principle to account for the singular agency of this compound acid on the skin, I confess myself in great doubt, or rather *in total ignorance*. That its power depends on chlorine, an elementary substance according to Sir Humphry Davy, there cannot be a doubt. The almost instantaneous effects that it produces on some people, its operation on the stomach, which it stimulates occasionally to contraction, and its suddenly causing a flow of bile, are all unlike a remedy that is conveyed by the known channels of absorption. In my opinion, the taste and the sensation that it occasions in the

mouth, are exactly such as are produced by the galvanic fluid, and it would be presumptuous to affirm, that no agency of a similar kind has an influence in the effects of the nitro-muriatic acid. I can suppose that the effects of this remedy do not arise from the transfer of matter by any set of vessels; but that they are the consequence of peculiar motions, which it has the power of exciting in the solids, or the fluids of the body.

I need hardly, I hope, observe, that after the treatment which I have recommended for bilious people, as well as during the employment of the acids, a regular and rather abstemious system of diet should be adopted. I have always thought that food chiefly of a vegetable kind is the most salutary, and that great temperance in the use of wine, or other liquors containing alcohol, is absolutely necessary, if indeed they are to be allowed at all. I perfectly agree in every thing that Dr Fordyce has said, with regard to the causes of the prevalence of bilious complaints in London. The sedentary occupations of many of its inhabitants, their eating great quantities of animal food and of butter, their use of porter, their living in close and hot apartments, deprived of exercise in the open air, with the sudden changes of a variable climate, are all powerful and sufficient causes of derangement of the liver, the stomach, and the other organs connected so intimately with the state of the bile.

It cannot be supposed that the experience of an individual is sufficient to ascertain the effects of a remedy, that is so widely applicable to medical practice as the nitro-muriatic acid. I have said that it is a substitute for mercury. In general its effects are equal to those of the mercurial oxides in the removal of disease, and in some cases I know that it possesses superior powers to any of them. I cannot give a better notion of the extent of its application in medicine, than by comparing its salutary effects to those of mercury, while with common knowledge and discretion it can do but little harm. If used with the mercurial preparations, it seems to quicken their effect and increase their power.

From the commencement of my search for a substitute for the oxides of mercury, I congratulated myself on knowing the composition of the nitric acid, and I have had reason, in



like manner, to be pleased with a similar knowledge of the substances still more compounded that I have employed with a like intention, and not without success. Although at present I have confined myself to some observations on a few of the derangements of the liver, and diseases of the bile, it must not be supposed, that during so long a period, I have not ascertained its effects in many more of the maladies to which we are subject. Some account of this experience was long ago published both in India and in England.

Russel Square, April, 1817.

P. S. Since I wrote the preceding paper, several of my friends have become convinced with me, that the very same effects arise from a diluted solution of chlorine in water, as are produced by the nitro-muriatic acid. Our late experience puts an end to all doubt, if any could have existed, that chlorine alone is the source of the material effects. We have sponged the skin with a solution of chlorine in water, and in many cases, have obtained the same results as arise from a similar application of the nitro-muriatic acid. The solution of chlorine to which I allude, is water through which the *oximuriatic acid gas* has been made to pass, until it could retain no more of it. This mode of applying chlorine has the advantage of not irritating the most sensible skins so much as the diluted nitro-muriatic acid might do; but even this solution I have diluted with about four times its bulk of water, before I applied it.

It is remarkable that the aqueous solution of chlorine, procured by mixing the acids together, is far less offensive than its solution got by the common means of passing the gas through water. Some degree of affinity seems in the first case still to subsist between it and the other elements of the acids, by which its sensible qualities are diminished to a certain extent. We are under great obligation to Sir Humphry Davy, for the light he has lately thrown on this subject, by which the effects of the *aqua regia* of the chemists are clearly accounted for.

I have of late received from different quarters, and from competent judges, a confirmation of the opinions I had ex-

pressed of the effects of chlorine in derangements of the liver, and in syphilitic affections. As those opinions were derived from experience alone, I cannot but think that a future day will confirm them.

I am told that some others have been less successful than myself or my friends with this remedy, and that by the application of chlorine to the skin, they have been unable to produce a sensible effect of any kind. I can make no reply to such opinions, as I do not know how the trials on which they rest have been conducted; but I must affirm, that I have sooner or later been able to produce very distinct effects in almost every case in which I have employed it. Time will decide between us; but on one side of the question I need not say, there is a want of right observation.

If it be considered that the most active of all the mercurial preparations in use are calomel, (submuriate of mercury,) and corrosive sublimate, (oxymuriate of mercury,) we may ascribe this great activity to the chlorine of the composition. Why the sanative powers of the mercurial preparations were supposed to arise from the metal alone, I cannot conceive. In like manner the chemists for a long time neglected the water that might be mixed with the materials of their experiments, the elements of which water gave rise to effects that misled them in all their reasonings. I am now nearly, I think, in a condition to show what effects in the system arise from mercury as a metal, and what effects are derived from the other elements of the mercurial preparations, whether this metal in them be combined with oxygen or with chlorine.

June 3, 1817.

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*Experiments on Croton Tiglium, or Purging Croton Nut.* Extracted from a Letter from WILLIAM INGLEDOW, Esq. Surgeon, H. E. I. C. at Mysore, to MR. RUMSEY, Surgeon, Amersham.

[From the Edinburgh Medical and Surgical Journal, for April 1817.]

THE Croton or Jemahlgotta, is the most common purgative that is employed by the native physicians in the Deekan;



but, owing to the inaccuracy of their weights, they are liable to administer it in very unequal quantities; and from over doses being frequently given to their patients, the severe drastic effects of the croton have been experienced to a degree that have endangered life, which circumstances chiefly have brought the medicine into disrepute, and have occasioned it to be considered of a highly dangerous nature.

In the native books of physic, the croton is ordered to be prepared by boiling in cow dung and water, after the central film, which unites the halves of the nut, has been removed.

The thin film inclosed within this seed is said to be of a very poisonous nature; the operation of boiling renders the medicine milder in its effects, by extracting part of the oil which it contains; and to prevent vomiting, griping, and excessive purging, pepper, ginger, and borax, are usually combined with it.

Seeing a satisfactory account of croton as a purgative in Dr. Ainslie's *Materia Medica*, and having a good opportunity of employing that medicine in the Charity Fever Hospital of this place, I began to use it early in the year 1815. I preferred to commence with the native mode of preparing it to any other, until I might obtain some correct knowledge of its effects from personal experience; and it was accordingly administered, as above prepared, to twenty-six persons, giving to each adult, male or female, one grain made into two pills, with a few grains of powdered ginger. Upon nine of these the purging commenced one hour after the pills were taken. Upon six others, two hours afterwards; upon six, three do. do.; upon two, four do. do.; upon two, six do. do.; and upon one it had no effect whatever. One person was purged twice; nine do. do. four times; four do. do. five do.; two do. do. six do. One of these individuals was griped severely; and ten others had a little griping.

Having derived a little confidence from the above trials, I prescribed the croton to nearly the same number of sick, after preparing it by extracting the film and boiling the nut in plain water merely; and its effects were similar to those of the former preparation.

I now determined to make trial of the croton after having

been exposed to the sun only; the film was removed, and the seed bruised and exposed for three days, by which means much of an oily substance was extracted.

This medicine was given to two hundred and forty-one persons, in doses of one grain to each adult, joined with a few grains of camphor, and made into two pills. Upon seven individuals it had no purgative, nor any sensible effect. Upon fifty-three others, purging commenced one hour after the pills were taken. Upon ninety-five, two hours afterwards. Upon thirty-six, three do. do. Upon thirty-five, four do. do. Upon six, five do. do. Upon six, six do. do. Upon two, seven do. do. Upon one, eight do. do. Nine of these were purged once; thirty-two, twice; thirty-seven, thrice; fifty-seven, four times; forty, five do.; twenty-two, six do.; six, seven do.; eleven, eight do.; five, nine do.; eight, ten do. Five others were purged eleven, twelve, thirteen, fourteen, and twenty times, and two had each fifteen purgative evacuations.

Of the above individuals sixty-five were vomited from one to four times; one of them had six and another eight vomitings from the pills.

Thirty-seven were griped in a trifling degree; forty others experienced more griping pain, and some of these latter were severely griped. A few had both vomitings and gripings, of these two last descriptions of sufferers.

In the above list ten were boys and girls, seven and eight years old; they took the croton in smaller doses, proportioned to their ages.

Being satisfied that the croton was an excellent purgative, and could be used with perfect safety, I wished to ascertain the powers of the expressed oil. I procured a small quantity that had been some time prepared; but as it was old, its operation was very uncertain, and it frequently had no sensible effect whatever.

After obtaining a supply of newly expressed oil, I prescribed it to thirty-four adults, in doses of five drops to each; and understanding that the oil of croton was more violent in its operation than the prepared nut, I declined administering it to any but full grown persons. Ten of these patients were purged in one hour after taking the oil; eleven others in two hours after-



wards; seven in three do. do.; six in four do. do.; two were purged twice; four do. three times; seven do. four do.; three do. five do.; seven do. six do.; one do. seven do.; four do. eight do. Three were purged nine, ten, and eleven times; one eighteen, and two twenty times.

Of those who took the oil of croton, thirteen had from one to four vomitings; six experienced a little, and twelve much griping. A few of this number had both vomiting and griping.

The oil was laid aside, as its effects were complained of; and the vomiting and griping it occasioned were both more frequent and more severe than when the pills were used.

The trials of the croton, from which these remarks have been taken, were made prior to the month of February last, since which period the same preparation of that purgative has been administered to two hundred and twenty-seven persons more; but as the effects were very similar to those above detailed, they were not particularly noticed in the relations of the cases.

In June, July, and August last, I have prescribed the croton to one hundred and sixty-four other patients, but instead of having it contused, the seeds, having the films taken out, were exposed entire to the sun until they became hard, and so dry as to admit of being divided into minute particles by trituration. This process requires a little attention to secure the proper quantity in every dose, and the oil which the croton contains prevents its being reduced to an impalpable powder.

The croton for this preparation was exposed during three days; the doses were the same in quantity as were previously used, and the effects similar, except that the number of purgative evacuations was frequently greater, owing to a larger proportion of oil being retained in the nut by exposing it whole to the sun.

Having prescribed the croton to upwards of seven hundred persons, I can pronounce it to be a valuable and safe purgative. I have not ventured to give it either to children under seven years of age, or to any individual much advanced in life. The above trials have been made almost entirely upon sick poor from this town and neighbouring villages, and sepoye

and others in the service of the Rajah, who sought relief at the Fever Hospital. Some of the former were ill provided with the common necessities of life; and upon such subjects the effects of the croton might be expected to be more severe than with the other natives liberally supplied with good food, or upon Europeans, who possess naturally much stronger constitutions. A few of these patients were Company's sepoys.

Croton purges should be employed with caution to persons debilitated by mercury, or infirm from long-continued sickness, as their operation is sometimes extremely severe upon such patients, and occasions them considerable distress.

Whenever this medicine purges too violently, the native practitioners employ ghee, or butter, internally, along with congee, or rice water, or, instead of these, cold buttermilk, to check its operation; and sometimes they use affusions of cold water upon the body for this purpose. I have tried the former in a few instances, and was told with good effects.

*Mysore, September 10, 1816.*

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*History of a case of Ill Conditioned Ulcer of the Tongue, successfully treated by Arsenic.* Communicated in a letter from CHARLES LANE, Esq. to HENRY CLINE, Esq. President of the Society.

[From the Medico-Chirurgical Transactions, Vol. VIII. Part I.]

Arundel, Dec. 16, 1816.

MY DEAR SIR,

You possibly may call to your recollection a case of ill conditioned ulcer of the tongue, in a gentleman whom I brought to you for your opinion in the year 1813; you deemed it at the time a very alarming case, and said that only two so formidable of the kind, had ever before fallen under your observation. The fortunate result of this case, and the very great and decided benefit derived from the use of arsenic in it, induced me to trouble you with the following account of its history.



Mr. G. B. aged 23, came to me in the month of June, 1813, with a very foul ulcer beneath the tongue; and said that he some time before had one on the upper part of it, which he said was healed; but on examination, there was a deep, irregular fissure, with raised, jagged, hardened edges, communicating with the ulcer under the tongue; which on examining with a probe, I found not only communicated with the fissure on the upper surface, but the instrument passed through the substance of the tongue, into a deep-seated ulcer at the root of it, and thence into the throat. The general appearance of the disease was most alarming, bearing a very strong character of carcinoma. A variety of means had been resorted to, without procuring the least alleviation of his sufferings, or producing any alteration in the state of the ulcer; he experienced great pain and difficulty in deglutition, and complained that the pain had of late extended behind the ears, to the back of the head and neck: mercury had been administered, but with evident bad effect; and the disease not only resisted every effort made to arrest its progress, but its baneful influence appeared to be extending itself to all the adjacent parts. The general health of the patient had sunk considerably; his pulse was small and tremulous; and he complained of excessive fatigue from the slightest exertion; his hand felt cold and clammy, and there existed a total want of energy in his whole system.

Under these circumstances I thought it a case in which arsenic might be administered with advantage; and I gave him ten minims of the solution every eight hours, gradually increasing the dose until he had experienced some sensible effect from it; and seventeen minims was the largest dose his stomach would at any time bear—the ulcer was injected twice a day, with a lotion containing a small portion of the solution in it, and I desired him to live on a light vegetable and farinaceous diet, with milk, and to abstain from wine, spirits, and fermented liquors; his bowels were regulated by means of small doses of magnes. sulphas.

The ulcer in about ten days put on a more favourable aspect, and at the end of a month it appeared perfectly healed.

Mr. B.'s health being now greatly amended, he indulged himself in taking very strong exercise; nor did he any longer restrict himself in his mode of living; and at the termination of some weeks the ulcer again made its appearance, and again yielded in about three weeks to the same mode of treatment. Not deterred by what had before occurred to him, he again became intemperate in his use of exercise, and careless in his manner of living; and at the latter end of the month of September, the disease returned with all its train of horrid symptoms, very greatly aggravated: at this time business calling me to town, I requested him to take the opportunity of consulting you; but before we commenced our journey I emptied his bowels well with magnes. sulphas, and once again desired him to have recourse to the solut. arsenici; and although he had taken it but four days, when I had the pleasure of seeing you, which was on the 1st of October, 1813, the ulcers had evidently assumed a much better appearance; and you desired him to continue the solution, taking at the same time, a drachm of pulv. sarsaparillæ twice a day: you likewise enjoined a most strict attention to that kind of diet which I ordered in the first instance; and impressed on his mind, the absolute necessity of persisting in it, for a very considerable time after the ulcers should again heal. He took the solution in doses of seventeen minims every eight hours for three weeks; the ulcers again healed, and he continued taking the solution for ten days after they were well. He complained at this time of great languor and debility; his pulse was small, feeble, and very quick; I prescribed for him two ounces of the mist. ferri comp. to be taken twice a day, which he continued taking for a considerable time with the most decided good effect; and I am happy to report, that this most alarming disease had at last yielded to the treatment he had now steadily pursued, and he has continued to enjoy an uninterrupted state of good health unto the present time.

I delayed troubling you with this statement, that I might have an opportunity of ascertaining the permanency of the cure; as more than three years have elapsed since the ulcers



had healed, I think I may safely calculate on the disease being perfectly subdued.

With every sentiment of esteem and respect, allow me, dear Sir, to subscribe myself,

Your most obliged and faithful,

CHARLES LANZ.

To HENRY CLINE, Esq.

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*On a new Mode of exhibiting Mercury; with Remarks upon Amputation at the Shoulder Joint.* By JOHN GOOCH, Esq. Surgeon, R. N.

[From the Annals of Medicine and Surgery, for March 1817.]

EVERY surgeon is aware of the accidental manner in which Mr. Crowther salivated his patient, by dressing a blistered surface with an ointment, containing the corrosive sublimate; still no attempts have been made to try the effect of impregnating the system in this way, probably from the severe pain and inflammation produced by it in Mr. Crowther's patient; for, I must confess, this often deterred me, when in actual service, from making trial of the practice, in preference to that disgusting but efficacious mode, of inducing salivation by inunction. Accident has, however, discovered to me a mode of impregnating the system by the sublimate, with but a very trifling degree of pain to the patient. A few days since I was consulted by a most intimate friend, on the subject of a little boy, eight years of age, who had caught the itch, from sleeping with the servant; and as it was particularly wished to avoid the use of sulphur, I directed the whole surface of the body to be sponged nightly with a strong solution of corrosive sublimate dissolved in common gin: this, after the third application, caused considerable irritation *on the surface*, and raised some small vesications on the abdomen, where the eruption had been more full; these were suffered to break, and in twelve hours, without any application, they were quite sunk and dry without pain or irritation, and the boy's system was strongly impregnated by the medicine, the breath being highly fetid,

and the fauces somewhat swelled and sore. Although Mr. Pearson does not speak favourably of the sublimate in the cure of primary syphilis, yet he acknowledges it to be peculiarly "efficacious in relieving venereal pains, in healing ulcers of the throat, and in promoting the desquamation of eruptions;" and if so, what a great advantage it must be, to be enabled to apply this virulent medicine with better effect to the surface, than to the delicate coats of the stomach, where, from its nauseous qualities, few are able to retain it, except after a full meal. This practice, of sponging the surface with a solution of the sublimate, appears to me to be particularly applicable to cases of venereal eruptions, and worthy of trial in all cases, as a cleanly and far preferable application to the black and greasy unguent; and I would recommend to my naval brethren, whose practice is more absolute, to make full trial of it, and report the result. The principal object in the use of the ointment is to impregnate the system without impairing it, by not affecting the bowels, as the internal prescriptions will do in spite of all the opium we can use. After the system has become affected by the use of the solution, the mercurial action may, I imagine, be sufficiently supported by the use of the pil. hydrarg. should the irritation on the surface be so great as to forbid its further application. Should such a mode of producing mercurial action in the system be found to answer, how gladly would it be embraced by persons in all ranks of life, as simple and cleanly; and we should not find those insuperable objections we now meet with, when recommending the use of the unguent in preference to the pill.

JOHN GOOCH,  
Surgeon, R. N.

17th Jan. 1817.

P. S. I do not mean to deny that the mode of fumigating the system, as recommended by Abernethy and Silonette, is not far preferable to this, where it is convenient to apply it; but this happens in few cases, except those under hospital treatment, where the surgeon no sooner forms his determination than he has the power to put it into execution.

Now that I am trespassing upon your columns, I shall take the liberty of offering a few observations on that "*dreadful*

*operation*," as it is called, of amputating the arm at the shoulder joint, and which has lately been touched upon by Mr. Charles Bell, in his collection of surgical cases. That gentleman appears to doubt the possibility of entirely commanding the flow of blood by the compression of the subclavian artery, and recommends, after dividing the capsule to introduce the thumb of the left hand into the joint, "betwixt the glenoid cavity and the head of the humerus," and bending the fingers of the same hand into the axilla, to compress the artery between them and the thumb, whilst performing the semicircular incision which separates the arm from the body, and of course divides the artery. This has a very specious appearance; but might not many practitioners, operating in this manner, leave too much integument to form a handsome stump; as, in my opinion, the beauty of an amputation at the shoulder depends on the flap formed by the deltoid being *rather small*, and the integuments beneath not left too long, so as to require some little adhesive power to bring the edges of the wound together. As to the power of commanding the blood by pressure above the clavicle, there can, I think, be but one opinion, viz. that it is at all times possible, by the thumb of an assistant, or an instrument adapted to the parts; and perhaps the best that can be used is a boot-hook, lightly padded. With regard to calling the operation bloody, or dreadful, it is in my humble opinion ridiculous, as I conceive it may at all times be performed with greater facility, and with as little pain to the patient, as a common amputation: I do not wish it to be understood by this, that I am an advocate for the performance of this or any other operation, unless absolutely necessary, but to do away the idea of frightening the young surgeon, by making him believe the "mole-hill to be a mountain."

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*History of a case of Lithotomy, with a few remarks on the best mode of making the Incision in the Lateral Operation.* By SAMUEL COOPER, Esq. surgeon to the forces.

[From the Medico-Chirurgical Transactions, Volume VIII. Part. I.]

Of all the great operations in surgery, lithotomy is perhaps that, in which great awkwardness, mortifying failures, and



dangerous blunders, are most frequently observed. Many a surgeon, who contrives to cut off limbs, extirpate large tumors, and even tie aneurismal arteries, with *éclat*, cannot get through the business of taking a stone out of the bladder, in a decent, much less a masterly style. This fact is so familiarly known in the profession, and its truth so often exemplified, that I may well be excused the unpleasant task of relating, in proof of it, all the disasters, which have come to my own personal knowledge. But I must take the liberty of remarking, that, in this branch of surgery, a great number of individuals do not profit by these instructive lessons of experience. It is true, the more they see of lithotomy, the more they are convinced of its dangers; yet, too often, instead of studying the causes of ill success, they merely derive, from the examples before them, a suspicion of the unskillfulness of the operator, or some discouraging conjectures about the difficulties of the operation.

The establishment of certain principles, to be observed in lithotomy, appears the most probable way of diminishing the frequency of the accidents and failures of this common operation. If these principles are not violated, the kind of treatment employed is but a secondary consideration, and the surgeon may do nearly the same thing with an ordinary dissecting knife, a concealed bistoury, a beaked scalpel, or a well-made gorget.

In the present paper, I propose to recite a case of lithotomy, which was attended with some particularity, and then offer a few general observations on the proper direction and size of the incision. These points are far from being settled, as must be plain to every body, who recollects, that Mr. John Bell recommends a free opening; Scarpa, a small one; that Mr. Abernethy and Scarpa prefer gorgets, which cut upwards and outwards, either at an angle at  $45^{\circ}$  or  $69^{\circ}$  from the axis of the urethra; and lastly, that the gorgets of Desault, Mr. Cline, and most other surgeons, are constructed for cutting, either directly outwards, or outwards and downwards.

When I was in charge of the military hospital at Oudenbosch, in Holland, in the spring of 1814, Sergeant Ryan, of the 1st Foreign Veteran Battalion, desired me to see his little

boy, about four years old, whose complaints made me immediately suspect a stone in the bladder. As I had no sound, I introduced a small silver catheter, with which a calculus was distinctly felt. Without taking the instrument out of the urethra again, I determined to perform lithotomy with a common dissecting knife. Indeed, no other mode could be adopted, as we had neither a staff, a gorget, large forceps, nor lithotomy instruments of any kind. After making the external incision in the usual way, and dividing the membranous part of the urethra, I dissected along the side of the catheter, until the prostate gland, and a small portion of the bladder beyond it, could be plainly felt with the fore-finger of my left hand. In this step of the operation, the edge of the knife was constantly directed inwards and upwards. The catheter was then withdrawn, as its very small size and round shape without any groove, made it impossible for me to derive any further assistance from it. The prostate gland now served as my guide in the completion of the internal part of the incision. With the edge of the knife, therefore, directed inwards and upwards, I cut into the bladder behind the base of the prostate gland; and carrying the incision forwards, under the direction of my left fore-finger, I made the requisite division of the neck of the bladder, and upper part of the side of that gland. With a small pair of ordinary dressing forceps, a roundish stone about an inch and a quarter in diameter was readily extracted.

This operation was done at the hospital, in the presence of Dr. Shanks, of the 56th regiment, and several other medical officers. No unfortunate symptoms followed, notwithstanding the child was put into a baggage cart two days afterwards, and conveyed in this manner in the rear of the regiment, a march of two or three days. Such premature disturbance, however, and the totally neglected state of the little patient, for nearly ten days, made the wound longer in healing than usual.

The preceding case is related, not with any view of persuading future operators to adopt exactly the plan, which the want of a staff obliged me to follow; for, if this instrument had been at hand, I certainly should not have withdrawn it before the completion of the internal incision; but, having turned its

convexity outwards and downwards, I would have cut inwards and upwards, into its groove. Thus, I conceive, the neck of the bladder and side of the prostate gland, might have been divided with greater convenience and safety.

My principal design is to bring to the recollection of surgeons the several advantages of making the incision through the whole of the parts cut in lithotomy, in a straight, regular, direct manner, from the surface of the skin in the perineum, to the termination of the wound in the urethra and bladder. In an adult subject, the external wound should commence about an inch above the anus. The impropriety of beginning it higher up has been duly insisted upon by Sharp, Bertrandi\*, Callisen†, and every good writer on the operation; yet, extraordinary as it may seem, this is one of the most common faults still committed by modern surgeons. The incision in the integuments is to be ample, that is to say, at least between three and four inches in length; because a free opening in the skin is not only exempt from danger, but attended with considerable advantages, especially those of facilitating the other steps of the operation, and preventing afterwards any lodgment and effusion of urine. The external wound ought to be directed towards a point situated a very little towards the anus, from the innermost projection of the tuberosity of the ischium. From the line thus made, the incision should be carried inwards and upwards, through all the parts between it and the side of the prostate gland. Another line, extending from the inferior angle of the wound, to the termination of the cut in the bladder, forms the precise limits, to which the depth of the incisions should reach, and no further.

The great principle of making the axis of the wound as straight and direct as possible should always be kept in view,

\* "Il ne faut couper l'urètre que le moins qu'on peut, parcequ'on obtient par ce moyen une meilleure voie pour pénétrer dans la vessie sous l'angle du pubis. C'est avec raison que Sharp dit que l'incision de l'urètre faite au dessus de cet angle est si peu utile pour l'extraction de la pierre, qu'on n'en retireroit pas plus d'avantage en le coupant presque dans toute sa longueur." *Traité des Opérations*, p. 127.

† "Ut ex partes haud sectione attingantur, quæ pro calculi egressu nihil faciunt; adeoque bulbus urethræ et hujus pars corpore spongioso circumdata intacta relinquatur." *Systema Chirurgiæ Hodiernæ; pars posterior*, p. 665.

whether the surgeon employ a common scalpel, which cuts into the bladder from without inwards, or other instruments, which divide the prostate gland and neck of the bladder, from within outwards, like the *bistouri caché*, beaked knives, and every kind of cutting gorget. In the latter circumstance, the only difference consists in cutting, from the bladder and urethra, downwards and outwards, towards a point, situated a little way from the tuberosity of the ischium, towards the anus, instead of carrying the incision from this point, upwards and inwards, through the upper part of the side of the prostate gland, and orifice of the bladder.

The following may be enumerated as important advantages from attending to the foregoing principle. •

1. The wound is made in a direction which affords the greatest room for the extraction of large stones; and the axis of the incision being also as nearly straight as possible, the introduction of the forceps, and the passage of the calculus outwards, are materially facilitated.

That these are important advantages, I think every surgeon will allow, who knows how much of the pain and danger of lithotomy depends upon the injury, which the parts suffer from the violence used in drawing out the stone,\* and the repeated introduction of the forceps. Larger stones may likewise be thus extracted, than in any other way of making the lateral incision, as must be obvious to every practitioner, who reflects for a moment upon the very limited room afforded at the upper part of the triangular space, between the arch of the

\* Cheselden, the most successful lithotomist England ever produced, made the incision in the direction here recommended,—sometimes inwards and upwards; sometimes outwards and downwards. The following remarks of another distinguished surgeon merit particular attention. “J’ai vu plusieurs fois dans les Hôpitaux de Paris, que les chirurgiens, coupant trop en haut vers l’angle du pubis sentoient une grande résistance au périnée, quand ils vouloient retirer le calcul avec les tenettes; on voyoit le périnée se tuméfier par la pression, qu’y faisoit la pierre; en ce cas, quelques opérateurs plus sages abandonnoient la pierre, introduisoient de nouveau le gorgeret, et en tournant en dessous la cannelure de celui-ci, prolongeoient l’incision obliquement vers la tuberosité de l’os ischion; et enfin à la faveur de cette plus grande ouverture, retiroient la pierre sans cause de déchiremens.” Bertrand, *Traité des Opérations*, p. 133.

pubis, the ramus of the ischium, and the neck of the bladder. This consideration cannot fail to have great weight with all surgeons, who feel duly convinced, how unsatisfactory a method it is to break a calculus, in order to get it out of the bladder. The measures necessary for the removal of all the fragments protract the completion of the operation, and seriously increase its danger; while the continuance of a single fragment of the stone behind, may cause a renewal of all the grievances, for the cure of which, the patient submitted to the operation.

2. The *arteria pudica profunda* can never be injured, because the surgeon does not let the knife, or other instrument made use of, cut in a direction which would bring it into contact with the inside of the tuberosity, or ramus of the ischium, where that vessel is situated.

3. The rectum will not be wounded, because the direction of the incision, either downwards and outwards, to a point situated a little way from the tuberosity of the ischium towards the anus, or from that point inwards and upwards, sufficiently removes the knife from the intestine. But no surgeon should be unmindful, that, when the rectum is considerably distended with feces, it rises up a little way by the side of the prostate gland. Hence, the prudence of emptying the large intestines, by means of a clyster, a short time before the operation. In using the knife, however, the surgeon always has it in his power to press the rectum downwards with the fore-finger of his left hand, when he is about to divide the prostate gland.

4. As the seminal duct penetrates the lower part of the substance of the prostate gland, in order to reach the urethra, and the knife, or other instrument employed, divides the upper portion of the side of that gland inwards and upwards, or outwards and downwards, it is obvious, that the duct will not be in any danger.

The judicious Callisen is well aware of the advantages of making a regular, direct incision into the bladder;\* but, like

\* *Vulnus sit æquale, haud angulatum, conicæ figuræ, apice vesicam respiciente, externa plaga ampla, et quatuor pollicum longitudine; unde*

Professor Scarpa, he is averse to making a free cut through the neck of that viscus. Indeed, as we shall presently notice, Scarpa does not sanction cutting any portion of the bladder whatsoever.

Every practitioner who will take the trouble to look over the history of the lateral operation, will find, that such lithotomists as have particularly distinguished themselves by their unparalleled success, as Frère Jacques, Cheselden, Côme, &c. all made a free incision into the bladder. This fact alone is enough to raise doubts of the goodness of the advice delivered upon this subject by Callisen and Scarpa; especially, as neither they, nor any other modern surgeon, can boast of having cut patients for the stone, with a degree of success at all equal to that of the above-mentioned operators. Of fifty-two patients, whom Cheselden cut successively, he lost only two; and out of two hundred and thirteen of all ages, constitutions, &c. only twenty. The accounts which we have of the successful operations done by Frère Jacques and Côme, are equally remarkable. During my residence at Paris, last spring, I saw a celebrated lithotomist of that city, an actual descendant of Frère Côme, extract a stone of considerable size, on the plan of his well-known ancestor. The incision was ample and direct, so that the calculus was taken out with perfect ease. Now, as the operations of this professed lithotomist are very numerous, and he enjoys the reputation of scarcely ever losing a patient, we are bound to conclude, that his plan of making a free opening, and directing the incision downwards and outwards, is well deserving of general imitation. At the same time, we are also justified in inferring, that the advocates for a small incision are promulgating the worst advice, which can be offered to the lithotomist. My own observations decidedly tend to these conclusions, as will be presently explained.

The Tract\* recently published by Scarpa, has for its main objects the recommendation of a modification of Hawkins's

effluxus sanguinis, puris, lotii, arenæ facilitatur. Syst. Chir. Hodiernæ; Pars Posterior; p. 656.

\* Memoir on the cutting gorget of Hawkins, &c. translated by Briggs.



gorget, and the inculcation of the propriety of making a small limited incision in the prostate gland, without cutting any part of the bladder. As sufficient room cannot thus be obtained for the extraction of even a stone of moderate size, he is an advocate for the gradual dilatation of the urethra and orifice of the bladder. He maintains, that the lateral operation, though executed with the greatest precision, does not exempt the surgeon from dilating, in a certain degree, the orifice of the bladder and cervix of the urethra; the dilatation of those parts, however moderate, being always necessary, even where the calculus is of middling size. He states, that, in an adult, the orifice of the bladder dilates almost spontaneously to the diameter of five lines; and he adds, that the lateral incision, within proper limits, divides the body and base of the prostate gland to the depth of four, or at most five lines, forming with the five, to which the orifice of the bladder naturally yields, an aperture of ten lines. But, observes Scarpa, in an adult, a stone of ordinary size and oval figure, is sixteen lines in the small diameter, to which must be added the thickness of the blades of the forceps: consequently, even after the incision has been made with the most scrupulous exactness, the stone, though of moderate size, cannot pass out of the bladder, unless the dilatation of the base of the gland and orifice of the bladder be carried to the extent of nearly eight lines, beyond the size of the aperture made with the knife. But, says Scarpa, if, in order to avoid distending the parts to the extent of eight lines, the base of the prostate gland, together with the orifice of the bladder and a part of its fundus, be divided to a depth equivalent to it, *the event would necessarily be an effusion of urine into the cellular membrane, between the rectum and bladder, and consequently suppuration, gangrene, fistule, and other serious evils.* (pages 4 and 5.)

According to Scarpa, the apex of the prostate gland forms the greatest resistance to the introduction of the forceps, and the extraction of the stone, and therefore ought to be completely divided (p. 7.); but, he contends, that two, and sometimes three lines of the substance of the base of the gland, should be left undivided; which, he asserts, is a matter of great importance, because the untouched portion, around the



orifice of the bladder, prevents the effusion of urine, and the formation of gangrene, or fistulæ, between that viscus and the rectum. (page 22.)

After this statement of Scarpa's sentiments, respecting one of the most interesting points of the lateral operation, a question or two naturally arise. Are we then to conclude, that the plan of making a free and direct incision into the bladder, ought to be abandoned? Must we forget, that it was this method which answered so well in the hands of the several renowned lithotomists already enumerated? And must we believe, that the advice delivered upon this subject by Bertradi, Desault, Mr. John Bell, and all the best modern surgeons in this country, is founded only upon a capricious partiality to the free use of cutting instruments? Earnestly as I respect the names of men, who have signalized themselves so much as Callisen and Scarpa, their authority can only influence me, inasmuch as I find it coincide with the dictates of experience, the great arbitrator of every disputed point in practice.

We have seen, that an apprehension of effusion of urine, gangrene, fistulæ, &c. is the only reason assigned by Scarpa for his aversion to making a complete division of the side of the prostate gland, and orifice of the bladder. But, I would inquire, do we find extravasation of the urine, between the rectum and bladder, and gangrene and fistulæ, so frequent after lithotomy in England, as to render it probable, that these ill consequences can ever proceed from our usual mode of dividing completely not only the side of the prostate gland, but also the adjoining part of the bladder? Are those bad effects so often experienced in this country, as to constitute a material source of uneasiness in the mind of a surgeon about to undertake lithotomy? Do they form a substantial reason for abandoning the maxim of always endeavouring, as far as circumstances will allow, to make an incision of sufficient size for the easy removal of the calculus? And would not Scarpa's method of stretching and dilating the wound, in order to get the stone out of the bladder, often dangerously prolong the operation; lead to much mischief from the repeated use of the forceps; cause serious contusion and laceration

tion of the parts; and, for all these reasons, increase the chance of inflammation of the bladder and peritoneum? It is this inflammation which destroys more than nine-tenths of the patients, who perish after lithotomy; and it appears to me, that the apprehension of it, from the consequences of making a small opening, is much better founded, than the fear of fistulæ, &c. from practising a large one.

In the course of the nineteen years that I have been in the profession of surgery, I have seen the lateral operation performed more than fifty times, either with various kinds of gorgets, beaked knives, the *lithotome caché*, or common scalpels. In all these examples, the avowed intension of the surgeon was to make a free opening into the bladder. I do not mean to say, however, that this was always actually effected, since the bad construction of some of the instruments employed, and other causes, sometimes frustrated the wise design of the operator. But what was the consequence? Generally speaking, those surgeons who made only a small incision into the bladder, and kept their patients a long while upon the operating table, before they succeeded in getting out the stone, by the repeated and violent use of the forceps, had the mortification to see very few of their patients recover, a large proportion being carried off by peritonitis, on the third or fourth day after the operation.

On the contrary, when the incision was ample and direct, so that the calculus could be easily and gently removed, the patients were almost invariably saved.

It merits particular notice, that, of late years, gorgets have been less employed than formerly, in one of the principal hospitals\* of this metropolis, scalpels and beaked knives having been preferred; and that since this beneficial change in practice, fewer patients have been lost there by peritonitis. This fact serves as a material confirmation of all that I have urged in the foregoing pages; because, the common fault of gorgets, particularly of those used some years ago, was to make too small an opening, and this sometimes not in the best direction. But, when a common scalpel, or beaked knife was preferred,

\* Saint Bartholomew's.



the surgeon generally made the incision in the prostate gland and neck of the bladder, large enough for the easy passage of the stone, and always downwards and outwards in the most advantageous direction.

With respect to the degree of importance which ought to be attached to the fear of effusion of urine between the bladder and rectum, gangrene, fistulæ, &c. \* can only repeat, that they are inconveniences which are not commonly observed after lithotomy in this country. In two or three instances only, I have known the urine come through the wound longer than usual; but even these cases ended well. As for the extravasation of urine and sloughing, although there cannot be a doubt of their occasional occurrence, they cannot be fairly imputed to the method of operating in England, since they have not taken place after any of the numerous operations, with the results of which I have been acquainted.

All these facts and considerations, therefore, incline me to doubt, whether the apprehension of effusion of urine, fistulæ, &c. be sufficiently serious and well founded to render it advisable for surgeons to relinquish the plan of making a complete division of the side of the prostate gland, and part of the bladder in the operation of lithotomy. Nor is it at all clear to my mind, that effusion of urine and sloughing are likely to be the effect of practising a free opening. Indeed, when they do happen, I suspect that they generally proceed from a totally different cause, *viz.* from the incision in the skin being too small and too high up, and from the axis of the internal part of the incision not corresponding with that of the external wound. Hence, the urine does not readily find its way outward, and some of it passes into the neighbouring cellular membrane\*.

\* In noticing the faults of Hawkins's gorget, Desault has observed: "La methode de l'enfoncer horizontalement dans la vessie sur le cathéter tenu à angle droit avec le corps, a deux grands désavantages: d'un côté celui de pénétrer par l'endroit le plus rétréci du pubis, et par conséquent de ne faire que difficilement une ouverture suffisante; d'un autre côté, celui de ne pas établir de parallélisme entre l'incision extérieure des tégumens qui est oblique, et celle du col de la vessie et de la prostate qui se trouve alors hori-

*An Historical Sketch of Medicine in the Russian Empire, from the Earliest Period to the present Time. Communicated by Dr. von Embden of Hamburgh.*

[From the Edinburgh Medical and Surgical Journal, for October, 1817.]

THE first medical man mentioned in Russian history was called Smer; he was physician to the Grand Duke Wladimir, had seen foreign countries, and lived in the tenth century. Before that time they very likely had no physicians. Distinguishing themselves by firm health, strength, hardiness, and simple regimen, they were subject to but few disorders; which, being simple in their nature, they cured with domestic remedies. The bathing-houses also were in use among them, and organized in the same manner as at the present time. As in the eleventh century Christianity was introduced into Russia, and in consequence of it convents were instituted, the monks began to practise physic for charity's sake. Sick wards were constructed in the convents, and Jeffrem, Bishop of Peregaslaw, erected in 1091 the first hospitals in which patients were gratuitously received. From the twelfth to the fourteenth century, we find indeed mention made of physicians, but no one of them is named except Peter the Syrian. Under the authority of the Tartars in the thirteenth and fourteenth centuries, the cultivation of sciences was at a stand; besides which, famine and the plague depopulated the country. In 1351, the black death, as it is called, coming into Russia, killed a vast number of people, and police regulations were entirely wanting at that time.

zontale. De-là la possibilité des infiltrations par les obstacles que les urines trouveront à s'écouler."

I have also no doubt, that some of the worst instances of extravasations of urine after lithotomy, have been owing to another cause, pointed out by the same excellent surgeon. "Imprudemment porté dans la vessie, le gorgere peut aller, par le stylet beaucoup trop long qui le termine, heurter, déchirer, perforer même la membrane de la vessie, et donner lieu à des infiltrations d'autant plus dangereuses, que le lieu d'où elles partent est plus inaccessible." (See *Œuvres Chirurgicales de Desault*, par Bichat, Tom. II. p. 460—461.)



In the fifteenth century, after the expulsion of the Tartars, the cultivation of science was revived, but the treatment of the sick still rested with the clergy, there being as yet hardly any physicians. Iwan Wasiliewitsch, indeed, had one; and in 1483, sent emissaries to Rome to invite physicians to come to Russia. In this century, and particularly in 1499, syphilis made its way through Poland into Russia; besides which the plague, at intervals, still raged, and the leprosy still occurred. In the beginning of the sixteenth century, two very worthy foreign physicians, Nicolai Lugeo and Theophill, lived at the court of the Grand Duke Wasilei Iwanowitsch. After this, Czar Iwan Wasiliewitsch II. brought more physicians into Russia. It was in his reign that the Russian clergy stipulated in the consistory, held 1545, that it became the Czar, the metropolite, and the upper clergy, to tax the convents for the benefit of the aged and sick; and in 1560, hospitals were erected in many cities; and it is very probable that it was about the same time that the first apothecary's shop was set up in Moscow. In 1552 we find the first mention made of scurvy in that country.

In the reign of Fedor Iwanowitsch, in 1588, the first medical book was published. The original being written in Latin, a translation of it in Polish was published for Waiwaden of Frotyk at Krakow in 1423, and from that language into the Russian in 1588. It consists of 1561 pages, containing also drawings of plants, animals, and stones. In 1592, under the same reign, the erection of preventive buildings against contagious disorders was begun, by placing small quarantine guards on several frontiers. A forensic examination of the body of a neighbouring prince, under Russian protection, who had been poisoned, also happened about this time.

In the reign of Czar Boris Feodrowitsch in 1600, some more German physicians were called into Russia. Michael Feodrowitsch Romanow still more contributed to the promotion of physic in Russia. He enlarged the preventive measures against the plague, and ordained, in 1615, the first military physicians, and in 1620, the first medical, or rather apothecaries' board, (*aptikarskoi priskas*.) which was to ordain physicians and apothecary shops, and provide them with medicines. The board consisted of the *archiater* and the other physicians



of the court, was under the direction of the empire, and had a chancery and many officers. Ten thousand rubles were annually spent for the maintenance of the board and the apothecaries' shops. Native medicines were now also ordered to be gathered in different provinces of the empire, and to be delivered as a peculiar tax. Some native Russians went into foreign countries to study physic, and foreign physicians came to Russia. A selection thus becoming possible, those that did not give satisfaction were sent back, the others for the most part receiving situations at court, with adequate salaries. From 1645 to 1676, under the reign of Alexei Michailowitsch, military apothecary shops were instituted, military surgeons and under surgeons ordained, who were obliged to get into the routine. A distinction was made between physicians and surgeons, the first being called doctor, or *dochtur*, of which there were upper and under *dochturs*, the same as upper and under surgeons. Strong measures were taken against the plague, and strict quarantine enforced. Physicians were sent abroad on purpose to buy exotic remedies in Holland and England, and greater care was employed in collecting the native drugs, and botanical gardens were established. The *woiwodes* were charged with the reception of the herbs, and their delivery to the board of apothecaries. Notwithstanding all these establishments, there was, nevertheless, no settled foundation for physic in Russia, and physicians and surgeons were still obliged to acquire their technical routine by serving as assistants to foreign practitioners, and no foundation was laid for the elevation of physic till in the reign of Peter the Great. He erected a medical board, which, in 1707, received the name of Apothecaries' Chancery, was removed to St Petersburg, and received, in 1714, a sum of fifty thousand rubles, in order to buy foreign medicines, and to remunerate its medical officers.

In 1721, all hospitals and apothecary shops, as well those belonging to the crown as the private ones, were placed under its superintendence, and all unprivileged medical practitioners were interdicted the practice. In 1725 this board received the name of Medical Chancery, and was only called Medical Board for the time when the court and *archiates* were at Moscow passing *ukases*.

The establishment of the chief military hospitals in 1706

gave the first opportunity for institutions for medical instruction. These hospitals were to be provided with the ablest physicians. Each of them received a few under-physicians, assistants, and pupils; besides which, they were obliged to take many young Russians as apprentices, and instruct them in anatomy, pharmacology, and surgical operations; besides which, they were instructed in Latin and drawing. These pupils were afterwards, according to their abilities, made under-physicians, or physicians (Leckar). There were three medical schools of that description at the various hospitals of St Petersburg, Moscow, and Kronstadt. In 1715, the Great Admiralty Hospital was built on the borders of the Neva, at St. Petersburg, with a church in the centre, and an anatomical theatre in each wing.

According to the military code, made by the Czar himself, each division received, in 1716, a doctor and a surgeon to the staff, each regiment a physician (Leckar), and each company an under-surgeon (Ziralaick); the whole army two field-apothecaries, one for the cavalry, and one for the infantry; each of them provided with two assistants and four apprentices.

Peter further ordained the establishment of foundling-hospitals in Moscow and other cities. A similar institution had already previously been established at Great Nowogorod, through the exertions of Bishop Zow.

A cabinet of anatomy and natural history, and a medical library, were now brought from Moscow to St. Petersburg. The natural curiosities had been partly collected in Russia, and partly by Peter, on his travels in Holland, in 1698. The museum was afterwards increased by the addition of that fine collection of the apothecary Seba, at Amsterdam, which was purchased for fifteen thousand florins; and, in 1717, by the famous Ruysch's museum, which was bought for thirty thousand florins. Ruysch confided his secret of injecting and embalming to the Emperor, who communicated it to the archiater Blumen-trast, who, in his turn, entrusted it to the inspector of the anatomical preparations, Schumacher. He again imparted the secret to the Archiater Rieger; who afterwards, on his leaving the Russian dominions, made it publicly known. In order to increase the museum, it was enacted, that from the whole em-

pire, all the monstrosities should be sent to St. Petersburg, for which rewards were offered by government. Travels were undertaken for the improvement of Russian natural history. In 1719, Dr. Messerschmidt was sent to Siberia for that purpose, where he staid eight years. He learned the Tangutian and Mongolian languages, from the Tangutian Lamas, and gave convincing proofs of his activity in his ornithology and ichthyology. Dr. Buxbaum, who, in 1719, had entered the service, went, in 1724, with the Russian embassy to Constantinople, and returned from thence through Natolia and Persia, over Astrachan, and published his botanical observations. The Russian mineral waters now also began to be investigated; and now the native Russians began also to treat physic as a science.

As in 1726, under Catherine I., the Imperial Academy of Sciences was established, many physicians of note were called into Russia, among whom were Duvernoy, Burges, Weilbrecht, Kaau Boerhaave, Wolf and Protassoff; the latter was a native of Russia, and pupil of Boerhaave. Under the reign of Anne, from 1730 to 1740, many acts relating to physic were passed. In 1733, the sale of poison in the grocers shops was prohibited. In 1735, the duties of the physicians of hospitals were stipulated. In 1736, the construction of the field apothecary shops was improved, and four of them in Dubnow, Smolensk, Riga, and Wyburg, appointed to follow the army in time of war. In 1737, physicians were appointed in different cities with a fixed pay; and, in 1738, one for the poor at St. Petersburg, whose duty it was to attend daily at the principal apothecary shop, in order to prescribe for the sick that came thither. Besides, this science received at that period considerable improvements through Heinzelman, Siegesbeck, J. G. Gmelin, Steller, and others; and Hahnhardt and Von Wellen published, in 1744, the first anatomy for the use of the pupils of the military hospital at St. Petersburg. In 1754, in the reign of the Empress Elizabeth, the University at Moscow was established, and increased attention was paid to midwifery. In 1755, one physician and two surgeons were appointed for curing small-pox, measles, and other contagious and cutaneous disorders in St. Petersburg; and, in the same year,

the first publication on inoculation made its appearance, though it was not practised till the year following.

In 1756, a library was joined to the Medical Chancery, and, in 1758, Bestucheff's drops drew upon them the public attention. The archiater Paul Zachariewitsch Cordoidi caused the best medical books to be translated into the Russian language, by Martin Schein, head surgeon to the Admiralty Hospital; in 1757, Heister's anatomy; and, in 1762, Plattner's surgery. He also caused young Russians to be sent abroad to study physic, which, however, was not effected till after his death in 1762. In 1763, Catherine II. established the Imperial College, which she divided into two departments, one directing the learning, and the other, under the appellation of the Chancery, the economical part. It consisted of six assessors, who worked under one president, and the college at Moscow also had one president and two members, constituting what was called the board. This college contributed much to the improvement of medical schools; the hospitals were also better organized; new apothecary shops were established; the number of botanical gardens increased, the Siberian rhubarb plantations extended; acts passed respecting the keeping up of the military apothecary shops in time of peace, and respecting the collecting of native remedies, &c.

In 1763, a scientific medical society was established at St. Petersburg, which assembled once a week for the sake of artificial (oral?) communications, and to receive written communications from members from abroad; but this lasted only five years. In 1765, a free economical society erected at that place, was confirmed by the Empress in the following year, and is still in existence. Many able physicians contributed, by their works, and treatises on contagious disorders, dietetics, popular medicine, and the plague among animals, to the accomplishment of their aim. In this year, the Medical College published their first Dispensatory. Inoculation, likewise, which had begun already in 1756, now became general throughout all Russia, the Empress and the Crown Prince having given the example in 1768. Houses were erected for that particular purpose at St. Petersburg, Kozen, and Irkutsk.

As the empire had now been divided into governments, phy-

sicians and surgeons were appointed in each different government, and hospitals erected in the chief of them. The want of medical men being increased by these measures, they wrote for a number from Germany.

In 1768, Catherine desired the naturalists to cultivate the natural history of Russia, and supported them most generously in it; by which Pallas, Falk, Gmelin, Lacman, and others, were induced to devote particular study to that science.

In 1769, the lady of Prince Dimitrei Michailowitsch Galizin, daughter of Prince Kantemir, fixed a legacy, by which three native Russians were to be sent to, and supported at Strasburgh, in studying physic.

In 1770, as the plague raged in many parts of Russia, as well as in Moscow, Saafonsky, and Stamoilowitsch, Oreans and Meltzer published their observations on the nature and treatment of that distemper.

In 1778, the Medical College published their second Dispensatory, Pharmacopoeia Russica, and in the next year, the Military Dispensatory.

In 1783, the Medico-Chirurgical Institution was established at St. Petersburg. This was independent of the Medical College; stood in scientific respect only under a director, surgeon Kelcher, and in economical respect under the chief master of the police of St. Petersburg, but received afterwards a separate chief director. Thirty pupils were there instructed at the expense of the Crown, and almost as many studied on their own expense. The institution was meant originally for natives only, but most of the teachers being Germans, and the greatest part of the pupils natives either of the German Russian dominions, or proper Germans, the lectures were in the beginning delivered in the German language. The institution had two clinical schools, and one for midwifery. This medical establishment being confirmed in 1786, the surgical schools at the military hospitals also received a better organization. The instruction was extended, and the number of pupils maintained by government fixed at 150, and any one studying at his private expense, had a free admission to the lectures, besides that they were to be boarded and clothed for 80 rubles a year. In this new establishment, the objects of medical instruction



were fixed upon for the future, and a sum of 248,760 rubles were stipulated for the support of the whole. At that period, thirteen military and seven navy hospitals were under the direction of the college.

In 1788, a society formed at St. Petersburg, under the superintendence of a Lutheran divine, Provost Larupe, who, from notions of philanthropy, undertook the treatment of the poor in their private habitations; it existed 12 years.

The Medical College, which hitherto had only had a president, now received an upper director in the person of Mr. De Wittinghofen, under whose direction a medical rate and order was published for the apothecaries and midwives, in the Russian and German languages. It was about the same time that the upper apothecary, Lowitz, made the discovery of preserving water from putrefaction, and freshening it when corrupted, by charcoal.

In 1791, the first institution for the recovery of drowned people was established. In 1793, a society of physicians at St. Petersburg began to publish a medical newspaper in the Russian language; and, in the same year, the University of Moscow received by an ukase the privilege of conferring the doctoral degree, which had hitherto belonged only to the Medical College.

Under the direction of Count Alexei Iwanowitsch Wasiliei, who, in 1793, came to the upper directorship of the college, professorships of midwifery, mathematics, and natural philosophy, were instituted, the number of professors increased, adjuncts added to them. In 1796 clinical institutions were opened in the military hospitals, the medical examinations were made stricter, and the students divided in classes, for the purpose of rendering their studies methodical. The college library was considerably increased; the anatomical, surgical, and chemical cabinets of the medical schools enlarged, and natural, philosophical, and mineralogical ones established. The physicians of governments and districts, who hitherto had stood under the governors, were placed under the immediate direction of the college. The manufacture of surgical instruments was so improved, that it did not yield to the best foreign one; and a printing-office was established, in which a vast

number of medical books, both originals and translations, appeared. At this same period, descriptions of the mineral waters near Baldahn, in Courland, and near Constantinegorak, near the Caucasus, made their appearance.

Soon after Paul I. began to reign, the physical board underwent considerable improvements, and stricter attention was paid to the public health, the hospitals and apothecaries' shops in the provinces, by establishing a medical board in every government city, in the year 1797. Each of them had a director, an operator, and an accoucheur, and the members were bound to publish physical and medical topographical descriptions of their governments.

In St. Petersburg an institution for midwives was also established, in which 22 female scholars were under one physician-accoucheur or professor of midwifery, one surgeon, and one midwife of greater experience. Midwives were also appointed in the government and district cities, the eldest of whom received 120, and the younger ones 80 rubles annually. In the same year, it was ordered that 30 scholars be sent annually from the theological seminaries to the schools of physic, and a separate school was erected on the Apothecaries' Isle at St. Petersburg, for the preparing of young men to the study of physic. The medical schools now receiving pupils that were scientifically prepared, and the professorships being supplied with native Russians, two medico-chirurgical academies were established at St. Petersburg and Moscow, in 1799; but the latter was, like that of the medical school at Kronstadt, united with the former. Medical jurisprudence now was added to the sciences that were taught before, and the number of students in both academies amounted to 240. They were divided into disciples and students, and, in order to prolong their time of study, their places in the military hospitals were supplied with petty surgeons.

In 1800 the academy was entirely separated from the military hospitals, with which it had hitherto been in close connection, and was removed to a building erected on purpose for it.

In 1801 the first successful attempt was made with vaccination in the foundling-hospital at Moscow; and in the same

year the college published a treatise on the utility of it. Dr. Boutaz was commissioned to introduce vaccination in the provinces, the medical boards being desired to contribute to the general distribution of so useful an invention; and it is really surprising how readily even the lowest class met this arrangement.

In 1802, with the establishment of the new ministry under Alexander I. the medical college was placed under the ministry of the interior, and the medico-chirurgical institute was combined with the medico-chirurgical academy. A medico-philanthropic committee was also established at St. Petersburg, which had, 1st, the attendance of sick paupers at their private abodes; 2d, the gratuitous dispensation of medicines; 3d, assistance in casualties that happened in the street; 4th, the erection of separate hospitals for contagious patients; 5th, the keeping of the maimed, and educating the deaf and dumb, &c. for its aim. This committee afterwards also paid attention to the numerous diseases of the eyes, for which a separate infirmary was established, first with 10, and afterwards with 100 beds; a separate accoucheur was also paid for attending on the poor. The number of members belonging to this society, in and out of the metropolis, is uncertain. Besides 1500 rubles, which were given in the beginning to the establishment, the government treasury contributed annually 5400 rubles, and the imperial treasury 24,000 rubles, besides which considerable contributions flowed in to the fund from individuals.

In the same year an edict was passed, that popular medicine was to be taught in the theological seminaries, in order to enable the clergy to assist the sick in those places where there was no physician.

In 1803 an imperial medical board was erected in the room of the medical college, and consisted of two divisions. The first is called the medical council, and its object is every thing connected with learning tending to the improvement of physic; the second is called the medical expedition, forming the third expedition of the ministry of the interior, and has for its object the special and economical affairs of the medical board.

In the same year, the erecting of veterinary schools was proposed in St. Petersburg, Moscow, and Lubum.

In the same year, the universities of Wilna and Dorset, and in 1804, those of Charhow and Kasan, were established. In the last year, the mineral waters at Lipetyk, in the Tambov government, were examined, and appropriated to the use of the sick; arrangements were also made against the yellow fever, which began showing itself in some parts of Europe, and Guyton-Morveau's method of fumigation was made publicly known.

In 1805 the army medical board was placed under the ministerium of war, and physician and surgeon generals of the staff, and a proper number of chancery officers were appointed for the army and navy. The military divisions received medical inspectors and vice-inspectors. The duties of the army medical men were more exactly pointed out, and honorary and pecuniary rewards were fixed for them. According to the military medical *etat*, published in 1805, there were at that time 2597 physicians and under-physicians for the army and military hospitals, who received 488,605 rubles salary; and 1288 for the navy, sea-ports, and navy hospitals, who received 215,403 rubles.

All military apothecary shops, and those belonging to the head admiralty, were placed under the ministry of the war department; but those from which the apothecary shops of the army and navy were to be supplied with medicines, were placed under the direction of the medical expedition.

A physician-general of the staff was also appointed for the civil. The anatomical cabinet of the medico-chirurgical academy was increased; the form of the surgical instruments in most common use was revised and improved; books in all the branches of physic were published; and the number of pupils educated at the academy and former medico-chirurgical establishment, who received afterwards appointments, between the years 1799 and 1808, amounted to 807.

In 1808 Dr. Rehman described the Turkish mineral waters near the Baikal. In this year an alteration was made in the medical expedition of the war department, a director and two counsellors being appointed, with a proportionate number of



chancery officers, in place of the physicians and surgeons general of the staff.

The medico-chirurgical academy was divided into two divisions, that of St. Petersburg and that of Moscow. In each of them a veterinary school, and one for apothecaries, was established, and its professors received the same rights and pay with those of the universities. The number of those studying at the expense of government was extended to 720. To remove any impediments to the study of physic, it was, under certain conditions, even permitted to receive such as were born in bondage. The members of the medical council were made perpetual honorary members of the academy. The medical dignities were divided in degrees, and the prerogatives of each fixed. The academy received the epithet Imperial, and its annual etat was fixed at 386,290 rubles. Physicians had before this already been sent abroad to study veterinary medicine. On their return, the building for the veterinary school being completed, it was opened in 1808, professors appointed for its various branches, and pupils received.

In 1809 a medical directory, or a register of all the physicians in the Russian empire, was published, according to which their number amounted to 2596, of whom 1187 were native Russians.

In 1810 the medical expedition was removed from the ministry of the interior, and placed under the minister of the police, whilst the medical council and the academy remained under the immediate direction of the minister for public instruction. A regulation also appeared respecting the principles according to which the incapacity for military service was to be judged of, as also another, respecting the examination of physicians, surgeons, midwives, and apothecaries.

*A Description of the Laurus Cinnamomum.* By HENRY MARSHALL, Esq. Staff Surgeon to the Forces in Ceylon. Communicated to the Royal Society of London by the Right Hon. Sir Joseph Banks, Bart. G.C.B. P.R.S.

[From the Annals of Philosophy, for October, 1817.]

THE *laurus cinnamomum* belongs to class Enneandria, order Monogynia, of the Linnæan arrangement of plants; specific character, “*foliis trinervis, ovato-oblongis, nervis versus apicem evanescentibus.*”

Roots branchy and ligneous. The bark of the roots has the pungent smell of camphor, with the delicious odour of cinnamon; yields camphor by distillation; wood light, fibrous, and inodorous.

The tree grows to the height of from 20 to 30 feet. Trunk from 12 to 18 inches in diameter; irregular, knotty, covered externally with an ash-coloured, thick, rough, scabrous bark; inner bark reddish. The bark of the young shoots is often beautifully speckled with dark green and light orange colours.

Branches numerous, strong, horizontal, and declining. Branchlets cross-armed.

Leaves oblong; from six to nine inches long, and from two to three broad; both ends sub-acute; entire, flat, three-nerved, lateral nerves vanishing as they approach the point; smooth; superior surface dark green, shining; inferior, green; grow in pairs, opposite, crossed.

Petiole half cylindrical, slightly channelled above, about three fourths of an inch long; has the odour and taste of cinnamon.

Peduncles many-flowered, long, lateral, and terminal; flowers hermaphrodite, white; calyx none; corolla six-cleft; stamens nine.

The fruit is an oval berry, larger than a black currant; adheres to the receptacle, like the acorn; the receptacle is thick, green, and hexangular; when ripe, the skin is bluish-brown, thickly scattered with white spots; under the skin is a greenish pulp, slightly acrid, has a terebinthine odour, and tastes in some degree like the berries of the juniper. This pulp covers

a thin, tough shell, which contains an oily, soft, pale, rose-coloured, inodorous kernel. The tree emits no smell.

The young leaves have in general a scarlet or light-liver colour, with yellow veins; as they acquire maturity they become olive, then green, and before they fall olive-yellow: mature leaves, when bruised, have a strong aromatic odour, and the biting sharp taste of cloves.

Crows and wood-pigeons devour the berries with great avidity: the productive quality of the seeds remains undestroyed; and by this means the plant is disseminated to a great extent of country, and is found even in the thickest and most impassible jungles.

Buffaloes, goats, deer, and horses, eat the leaves with great eagerness.

The flowers appear in January and February; and the seeds ripen in June, July and August. The odour of the flowers is to people in general disagreeable; to many it is like the scent exhaled from newly sawn bones; to others, with St. Pierre, "the flowers of the cinnamon-tree smell like human excrement."

The prepared bark of this tree is the highly esteemed spice cinnamon, which is perhaps the most useful, certainly the most generally grateful, of all the aromatics.

Thunberg, who visited Ceylon in 1775, and who has given a fuller account of the cinnamon-tree, and of the preparation of cinnamon, than had been published before his time, appears to have obtained his information respecting the tree chiefly from Burman and the chaliahs, or cinnamon-peelers. He has enumerated a number of sorts of *laurus cinnamomum*. His distinctions are not founded either on an external or internal variation of the plant, but on a real or supposed difference of the taste, flavour, &c. of a preparation of its bark. His first five sorts are the produce of the *laurus cinnamomum*, and have obtained from the chaliahs the following characteristic denominations: rasse kurundu, nai kurundu, capura kurundu, cahatte kurundu, and sevel kurundu; from the Cingalese adjectives, rassi (sweet), nai (acrid or snake), capuru (camphoric), cahatte (astringent), sevel (mucilaginous). These distinctions are arbitrary and comparative, imaginary, and ill-defined.

Two peelers rarely ever agree in giving the same denomination to a similar piece of cinnamon. The diversities of the quality of cinnamon do not appear to arise from any varieties of the plant, but from care and skill in its preparation, the soil and exposure of the country, the age and health of the plant. The cinnamon-tree is rarely found except on the south and west aspect of the island, It is chiefly procured between Negombo and Matura: beyond these limits the bark is never of a good quality; it has little taste, and is greatly deficient of the spicy aromatic flavour of the cinnamon. Even between these limits the cinnamon is not of the same quality; exposure, soil, shade, and other circumstances, have powerful effects in producing a corresponding variety of the excellences and defects of the produce of the tree.

The dawul kurundu of the Cingalese is divided by Thunberg into two species,\* and form his sixth and seventh sorts. His eighth, ninth, and tenth sorts, do not belong to the laurel genus.

The dawul kurundu, nika dawula, and nika kurundu, of the Cingalese (*laurus cassia*, Linn.) abounds in many parts of Ceylon.

The trunk of the dawul kurundu is branchy and crooked, leaves ovato-lanceolated, entire, from four to six inches long, and from one to two inches broad; three nerved; the lateral nerves terminate before they reach the point of the leaf, and join the middle one; above the petiole smooth, alternate; upper surface dusky-green; under surface pale grey; petiole half cylindrical; flat above; flowers inodorous, whitish, verticillated, sessile; calyx common; four-leaved; leaves roundish, concave; contains five distinct flowers with short peduncles; corolla six-petalled, ovato-concave, nearly equal; filaments nine, shorter than the corolla; stile short; stigma obtuse; berry black, round, and about the size of a large currant. Under the skin of the berry is a bitterish pulp which separates easily from a thin, fragile, membranous pellicle, that contains an excessively bitter kernel, one seeded.

\* This division he has copied from Burman, who, from two synonymous appellations for the same plant, made two sorts or varieties of it.



The bark of the root is extremely bitter; the leaves, and the bark of the trunk, and branches, are bitter, and have in a very slight degree the taste and odour of myrrh.

This is the cannella de matto of the Portuguese, the wilde cancel of the Dutch, and the laurus myrrha of Loureiro.

Dawul kurundu in the Cingalese language means drum cinnamon; and authors have asserted that drums and tubs were made out of the wood of this tree. I have not been able to find that any use is made of the dawul kurundu in Ceylon, either in medicine, or for economical purposes.

The karuwa, or karua, of the Malabar coast, has in several botanical works been classed as a synonyme with the dawul kurundu. It has been so classed in Willdenow's edition of the Genera Plantarum. Whether we contemplate the ample description of the karuwa by Govenor Van Rheede, or examine the quality of its prepared bark, no specific difference can be discovered between the cinnamon-tree of Ceylon and the karuwa of the Tamools.

The similarity of the appellations by the people of Ceylon and the Malabar coast strongly support this opinion. The Tamool name for cinnamon is karua puttay, or bark of the karuwa; the Cingalese term is kurundu potto, the bark of the kurundu, or kurundu gaha: one of these terms appears to be a corruption of the other, although it be not evident which of them is the original.

The prepared bark of the karuwa is, according to good authority, inferior to the best Ceylon cinnamon. It is, however, allowed to be superior to the produce of the cinnamon-tree which is found in the northern and eastern part of the island.

It is difficult to conceive how the dawul kurundu obtained the appellation of laurus cassia by Linnæus, and had qualities attributed to its bark which it does not in the slightest degree possess. Linnæus appears to have been misled by the works of former botanists. Paulus Hermanus was physician to the Dutch settlements in Ceylon, and was one of the first who described the plants of the island. Many of his descriptions are inaccurate and defective. Burman copied his inadequate description of the cinnamon-tree, but little improved, into his

*Thesaurus Zeylanicus*; from which Linnæus transferred it into his *Flora Zeylanica*.

The following circumstance may have very materially contributed to the misconception of Linnæus.

In Burman's Works, Plate XXVII. is delineated a figure of the *laurus cinnamomum*; and another drawing of the same plant, differing in no essential circumstance, is given in Plate XXVIII., but which Burman has by mistake asserted to be the *dawul kurundu*. Burman observes that Herman's description of this plant is obscure and unsatisfactory; and seems to have perceived the incongruity of his own plate with the description added, which is probably chiefly taken from Herman.

It is evident that Burman was undecided in his conjectures respecting the qualities of the *dawul kurundu*, and leaves the subject to be determined by those who had an opportunity of examining the plant in its native soil. Linnæus may by this mistake have been misled, and confounded the two plants by assigning the aromatic qualities of the *laurus cinnamomum* to the *dawul kurundu*, which has perhaps by this means obtained the name of *laurus cassia*.

Burman has been equally unfortunate in enumerating two other species of cinnamon under the denomination of *kurundu pelle* and *kurundu ette*. The first term specifies, in the Cingalese language, a young cinnamon plant; the second, the seed or berry of the cinnamon-tree.

Thunberg followed next. It is not evident that he perceived Burman's mistake; he certainly did not rectify it; and his authority has tended to confirm the errors of his predecessors. He seems to have confounded the *dawul kurundu*, *laurus cassia* (the wilde caneel of the Dutch), with the natural or uncultivated cinnamon-tree which grows spontaneously in the woods. When Thunberg means to describe the prepared bark of the *laurus cassia*, he gives the correct distinctive marks of the prepared bark of the trunks and branches of cinnamon trees too old to afford good cinnamon. He says, "the *laurus cassia* yields a coarse kind of cinnamon, and seems to be merely a variety of the former," (the *laurus cinnamomum*): again, "It is probable that the coarse and finer cinnamon, or the *laurus cinna-*

momum and cassia, are merely different varieties, arising from the climate, and especially from the soil."

Mr. Forbes, in his *Oriental Memoirs*, seems to have also confounded the two plants, and applies the term cassia to the *laurus cinnamomum*. His words are: "The leaves of the cassia are smaller than the laurel, and more pointed. Those of the cinnamon still more delicate; the blossoms of both, like the flowers of the arbutus, hang in bunches, white, and fragrant; the fruit resembles an acorn. The young leaves and tender shoots are of a bright red, changing to green as they approach maturity; they taste of cinnamon," &c. This is an exact description of the cinnamon-tree, not of the *laurus cassia*.

The dried leaves of the cinnamon-tree have an olive-yellow colour. They are shining and glassy; thick, crisp, and durable; the three nerves are protuberant on the inferior side of the leaf; they endure for several weeks the heat and rains of a tropical climate, without losing their spicy aromatic taste; they have in a considerable degree the acridity and flavour of cloves. Commelinus informs us that they afford oil of cloves by distillation. They give an excellent simple, and spirituous water, and an essential oil, according to Dr. Dancer. In Cayenne they are employed in the distillation of rum, to improve its flavour.

Is the leaf of the cinnamon-tree the *malabathrum folium* or *folium indicum* of the ancients? *Tamala patra* is the Sanscrit appellation for cinnamon, of which term *malabathrum* seems to be only a varied pronounciation, or slight corruption. I am aware that some authors are of opinion that the *malabathrum folium* is the produce of the *laurus caryophyllus*, *laurus kulit cawang*, and that others assert that it is the leaf of the piper betel.

The leaf of the piper betel does not possess the qualities ascribed to the *folium indicum*. When fresh pulled the betel leaf is soft and succulent, and very soon loses its acrid quality. By drying, it becomes thin, flexible, tasteless, and inodorous. The natives rarely use it when more than two or three days pulled. The *malabathrum* was held in high estimation by the Greeks and Romans as a perfume, and it entered into the composition of their aromatic unguents.

The cassia bud of commerce is the fleshy hexangular recep-

tacle of the seed of the *Laurus cinnamomum*. When gathered young, the receptacle completely envelopes the embryo seed, which progressively protrudes, but continues firmly embraced by the receptacle. The buds have the appearance of nails, with roundish heads of various sizes. If carefully dried, the receptacle becomes nearly black, and the point of the berry light-brown. The seeds contract by drying, and often fall out; the receptacle is then cup-shaped. When long kept they have a dirty-brown colour, and possess very little of the aromatic flavour of cinnamon. The Tamul name for cassia buds is *sirnayapoo* or *sirnahapoo*; Cingalese, *kurundu ette*; Dutch, *kassia bloemen*; French, *fleurs de la cannelle*.

Cassia buds possess the same properties with cinnamon, though in an inferior degree. By distillation they yield an essential oil, not inferior to that which is prepared from cinnamon.

The confectioners use them in the composition of conserves.

Cassia buds are not prepared in Ceylon.

By decoction, the ripe seeds yield a suety substance, which is perfectly inodorous, and has no very considerable degree of inflammability. The natives sometimes extract this substance, and employ it as a liniment for external bruises, &c.

Cinnamon thrives best in a situation rather elevated, and in a sandy loam, mixed with the earthy remains of decayed vegetables. In the rubbishy soil near houses it is uncommonly succulent. The shelter afforded by buildings appears to contribute to its luxuriance.

The ground for planting cinnamon is in the first instance prepared, by cutting down the low brush-wood and young trees. The lofty trees are allowed to remain, as the cinnamon is observed to thrive better under their shade, when not too close, than when it is exposed to the direct rays of the sun. The brush-wood is collected into heaps, and burned. The planting commences when the seeds are ripe, generally during the months of June, July, and August. The workmen stretch a line upon the ground, along which they with a *mammettee* (hoe) turn up about a foot square of earth, at intervals of six or seven feet. The ashes of the burned shrubs and branches of trees are then spread upon the spots of friable earth; and into each of them four or five cinnamon berries are planted with



a dibble. Branches of trees are spread upon the ground, to prevent the friable earth from being scorched, and to protect the young shoots. The young shoots appear above the ground in about 15 or 20 days. Sometimes the berries are sown in nurseries, and the shoots transplanted in the months of October and November.

In favourable situations the shoots attain the height of five or six feet in about six or seven years; and a healthy bush will then afford two or three shoots fit for peeling. Every second year from four to seven shoots may be cut from a bush in a good soil. Thriving shoots of four years' growth are sometimes fit for cutting.

As four or five seeds are sown in one spot, and as in most seasons many of the seeds germinate, the plants grow in clusters, not unlike a hazel bush. In seasons with little rain many of the seeds fail, and a great number of the young shoots die; so that it is frequently necessary to plant a piece of ground several times successively. A plantation of cinnamon, even on good ground, cannot be expected to make much return before eight or nine years have elapsed.

The plantations from which a considerable part of the cinnamon is procured are Kaderang, Ekele, Marendahn (Colombo), and Morotta.

These are styled protected plantations, to distinguish them from a number of extensive fields that were planted with cinnamon by the Dutch, and which have since been permitted to be overrun with creepers, brush-wood, &c. and many of the cinnamon plants rooted up by the natives.

Kaderang is situated in the neighbourhood of Negombo, and contains about 4,106 acres. A few small pieces of ground belonging to private individuals are included in this statement. A very considerable portion of this plantation is marshy and unproductive. There are about 1623 acres which bear cinnamon; and this number is annually increasing. Kaderang, on an average of ten years, produces annually about 535 bales of cinnamon.

Ekele is situated 10 miles north from Colombo, and contains about 1598 acres of ground of an excellent soil, which is

not entirely planted; but the cinnamon is reckoned to be of the finest quality. The annual produce is about 341 bales.

Marendahn is situated in the immediate vicinage of Colombo, and contains (including a number of small fields belonging to private individuals) about 3824 acres of ground well adapted for the cultivation of cinnamon. More attention has been paid to this plantation than to any of the others: it is nearly completely planted, and produces annually about 1124 bales.

Morotta lies seven miles south from Colombo; and is about the same extent as Ekele. Little attention is paid to the cultivation of this plantation. It yields annually about 218 bales.

The jungle and neglected plantations in the neighbourhood of Colombo and Galle afford a large quantity of excellent cinnamon.

The Candian country has continued to furnish annually a quantity of cinnamon. The King did not grant permission for the chaliahs to enter his territory; but they contrived to make short excursions into it; and by stealth, bribery, or sufferance of the headmen, succeeded in obtaining a considerable quantity of bark, which they prepared at their leisure, after leaving the Candian limits: occasionally they suffered for their temerity, but not often.

On an average of 10 years the quantity of cinnamon deposited annually in the magazine of Colombo from the jungles and abandoned plantations of our own territory, including what has been collected in the Candian country, amounts to 1184 bales; and at Galle, during the same period, 935.

The peeling commences early in May, and continues until late in October. The rains which precede, and occur during the southwest monsoon, produce such a degree of succulency in the shoots as to dispose the bark and wood to part easily.

The setting in of the rainy weather immediately produces a fresh crop of scarlet or crimson-coloured leaves.

The cinnamon harvest begins by dividing the peelers into small parties, which are placed under the direction of an inferior superintendant. When they are to peel in the plantations, each party has a certain extent of the plantation allotted to it. A few of the party cut shoots, while the remainder are employed in the wadu (or peeling shed) to remove the bark and

a dibble. Branches of trees are spread up to prevent the friable earth from being scorched by the young shoots. The young shoots appear in about 15 or 20 days. Sometimes the seedlings are raised in nurseries, and the shoots transplanted in the autumn, October and November.

In favourable situations the shoots grow to the height of six or six feet in about six or seven years. They then afford two or three shoots a year from four to seven shoots on a good soil. Thriving shoots are cut at times fit for cutting.

As four or five seedlings are raised in seasons many of the seedlings, not unlike a half grown tree, of the seeds fail, so that it is frequent times a year.

good ground

eight or

The incision is made on the opposite side of the branch when the branch is thick the bark is divided in two or four places. The kokette is next introduced under the bark

which is gradually separated from the wood, and laid aside. When the bark adheres firmly to the wood, the shoot is strongly rubbed with the handle of the kokette. These sections of bark are carefully put one into another, the outer side of one section being placed in contact with the inner side of another, and are then collected into bundles, and firmly pressed bound together.

In this state the bark is allowed to remain for 24 hours or sometimes more; by which means a degree of fermentation is produced that facilitates the subsequent operation of removing the cuticle. The interior side of each section of bark is placed upon a convex piece of wood, and the epidermis, with the greenish pulpy matter under it, is carefully scraped off with a curved knife. During the operation the peeler sits upon the ground, and keeps the bark steady upon the piece of wood with his heel or toes. The bark dries, contracts, and gradually



to prepare the cinnamon. When the chaliah perceives a bush with shoots of a proper age, he strikes his ketta (which resembles a small bill-hook) obliquely into a shoot; he then gently opens the gash, to discover whether the bark separates easily from the wood. Should the bark not separate easily, the shoot or branch is not deemed fit for cutting. The chaliahs seldom trust implicitly to any external mark of the proper condition of the plant, and rarely try a shoot until the scarlet leaves have assumed a greenish hue. Some plants never acquire a state fit for decortication. Shoots of many years' growth often bear the marks of numerous annual experiments to ascertain their condition. Unhealthy, stunted plants, are always difficult of decortication; and the cinnamon procured from them is generally of an inferior quality.

The peelers do not cut shoots or branches whose diameter is much less than half a inch, or more than from two to three inches.

To remove the bark, the peeler commences by making with his kokette, or peeling knife, through the bark, a longitudinal incision, of which the length is determined by the figure of the shoot. A similar incision is made on the opposite side of the shoot, and when the branch is thick the bark is divided in three or four places. The kokette is next introduced under the bark, which is gradually separated from the wood, and laid aside. When the bark adheres firmly to the wood, the shoot is strongly rubbed with the handle of the kokette. These sections of bark are carefully put one into another, the outer side of one section being placed in contact with the inner side of another, and are then collected into bundles, and firmly pressed or bound together.

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assumes the appearance of a quill or pipe. In a few hours from the time the cuticle is removed, the peeler commences to put the smaller tubes into the larger, and introduces also the small pieces. By this means a congeries of quills is formed into a pipe, which measures about 40 inches long. The cinnamon is suspended in the wadu upon open platforms for the first day. The second day it is placed in the sun, on wicker shelves, to dry. When sufficiently dry, it is collected into bundles of about 30lb. weight each, and in this state deposited monthly in the Government magazines at Colombo or Galle.\* When newly prepared, cinnamon has a most delicious odour: this odoriferous quality becomes gradually fainter. Cinnamon is at first a light-orange colour, which becomes a shade darker by exposure to the air. The bark of old trees acquires a reddish-brown colour.

Shortly after the cinnamon is deposited in the store-houses, the inspection of it commences. The East India Company employ an inspector and two assistants to superintend the sorting and baling of the cinnamon. The manipulation is performed by natives. Each bundle is placed on a table or large bench; the bundle is untied, and the cinnamon examined quill by quill. It is divided into a first, a second, and a third, or rejected sort. The first and second sorts are alone deemed of a quality fit to form the Company's investment. The sorting of cinnamon consists chiefly in detecting or separating what is coarse, and otherwise of a bad quality, including the impositions of

\*From Baldeus's print of the manner of peeling cinnamon, and also from his description, it would appear, that during his residence in Ceylon the bark was removed from large trees, and the trunk allowed to remain uncut. Captain Percival, who published his account of Ceylon nearly 200 years afterwards, has only copied and reduced the Rev. Gentlemen's print, and rendered it confused, by including in the same plate another print from the same author, showing the costume of the native women, and their manner of making butter. Many authors subsequent to Baldeus have asserted that the decorated stump regained a new bark. I was, however, surprised to find the following passage in a manuscript memoir on the cultivation of cinnamon, addressed to Mr. North, while Governor of Ceylon, by Mr. Jonville, Superintendent of Cinnamon Plantations: "Your Excellency remembering that some travellers had advanced that the bark of the cinnamon is taken off the branch growing from the trunk, and that it grows again, ordered me to try that: I did so on several plants; but they all died."

the peelers. This is chiefly performed by inspection. Habit soon enables the people employed to discover by a single glance of the eye what is considered defective. Tasting is very rarely had recourse to.

The bark of the large shoots, or thick branches of trees, produces coarse cinnamon, which is generally rejected by the sorters. This cinnamon is thick, and has a reddish-brown colour, rough surface, loose texture, and is coarse-grained. It breaks short, shivery, and crumbling. When chewed it is disagreeably pungent, feels gritty, ligneous, and sandy, in the mouth.

The peelers occasionally scrape off the external pellicle of this quality of cinnamon. This operation thins the cinnamon and improves the colour, but leaves it with a coarse, rough surface. This quality of cinnamon is always rejected.

Cinnamon prepared from the bark of very young and succulent shoots is rejected. It is light straw-coloured, thin, and almost without flavour or taste; and what little aroma it possesses is very evanescent.

Mildewed or half-rotten and smoky cinnamon is rejected. When the peelers are overtaken with rain at a distance from sheds, the bark they have previously collected ferments, becomes decayed, and inodorous. In such situations they frequently retire to caves, or very confined huts, where they kindle fires, to procure warmth and to dress their food. The smoke arising from these fires often greatly injures the bark, and renders it unfit to be manufactured into good cinnamon. To increase the weight, the peelers sometimes stuff the quills of cinnamon with sand or clayey earth, thick ill-prepared pieces of bark, &c. &c. When these impositions are suspected, the quills are undone, often broken, and the foreign mixtures removed.

This is one of the many causes which prevents the cinnamon from being in quills of nearly equal length. Cinnamon produced beyond the river Keymel on the north, and the Wal-laway on the south,\* is generally condemned. It is light-co-

\* Good cinnamon is found on the southern portion only of the island. The district which affords it appears to lie to the south of a line stretching from a few miles of Negombo to Panama, a station 18 miles north of Kandy, and from Panama to the neighbourhood of Hambangtotte.

loured, greatly deficient in aromatic flavour, astringent, bitter, and has sometimes a taste similar to the rind of a lemon. Even between these limits the cinnamon produced differs greatly in quality. Differences of soil, and exposure, are very evident causes of a difference in the quality of cinnamon. Shoots exposed to the sun are more acrid and spicy than the bark of those which grow under a shade. A marshy soil rarely affords good cinnamon. It has often a pale yellow shade, approaching to the colour of turmeric. It is loose, friable, and gritty, and its texture coarse-grained. It possesses little of the spicy taste of cinnamon. Very often, however, the cause of the inequality of this spice is not apparent; the bark of different shoots of the same bush have often very different degrees of spiciness.

That which is considered in Ceylon as of the best quality is of a light yellow colour, approaching nearly to that of Venetian gold; thin, smooth, shining; admits of a considerable degree of pressure and bending before it breaks; fractures splintery; has an agreeable, warm, aromatic flavour, with a mild degree of sweetness. When chewed, the pieces become soft, and seem to melt in the mouth.\*

The first and second sorts are weighed, and put up into bundles, each weighing 92½ lb. English. Each parcel or bale is firmly bound round with ropes, and then put into double gunnies.

The outside of the bale is marked with the number of the quality of the cinnamon, and the initial letter of the name of the protected plantation from whence it is procured. The bales of cinnamon which are procured in the neglected plantations, the woods of our own territory, or in the Candian country, are marked A. G. (Abandoned Gardens.)

\* On an average of 10 years, it appears that about one-sixth of the cinnamon collected has been rejected as unfit to form a part of the Company's investment. The specimens of cinnamon from China which I have seen differ from good Ceylon cinnamon in being darker coloured, rougher, and not so well prepared, denser, and breaks shorter, but without crumbling. It is more pungent, and has a flavour easily distinguishable from Ceylon cinnamon. The taste is harsher; and, when chewed, is more ligneous. Ceylon cinnamon has a delicious sweetness, which is not very perceptible in China cinnamon. Some of the tubes are deficient of the spicy qualities of cinnamon; and sometimes pieces are found which have an astringent and bitter taste.



The company export their cinnamon from Colombo or Galle. The interstices between the bales are filled with black pepper. This mode of packing was generally practised by the Dutch, and has been scrupulously adhered to by the English. Thunberg attributes peculiarly useful qualities to the packing with pepper. Accident and economy of tonnage very probably induced the Dutch to adopt this mode of stowing. The ships belonging to the Dutch East India Company appointed to take in cinnamon arrived at Ceylon often half filled with pepper from the Malabar coast. As the cinnamon bales are nearly circular, a considerable saving of tonnage was effected, by removing the pepper, and strewing it among the bales. When pepper happened not to be readily procured, the spaces between the bales were filled with coffee.

The Dutch were less careful in sorting the cinnamon. Thunberg's ludicrous account of the medical men of the colony being employed for several days together in chewing cinnamon has been orally confirmed by the people who had been employed in this duty. At all the stations where cinnamon was deposited "two Doctors" were appointed to "taste the cinnamon." As the inspectors did not unbind the bundles, they had a very limited opportunity of ascertaining the quality of the cinnamon, and none of detecting the impositions and adulterations of the peelers. With the Dutch the peelers incurred blame, and were frequently punished, when the monthly collection of cinnamon was considered defective in quantity; and for successful industry they sometimes received a small premium; hence it became the interest of the peelers to attempt impositions, to increase the weight of their collections. The same practice is followed by the English.

The Directors of the Dutch East India Company complained frequently, in their communications to the Colonial Government, that the cinnamon sent from Ceylon was coarse, and ill-prepared. Sometimes it was so bad that they did not dare to expose it to sale, lest the credit of the Ceylon cinnamon should suffer; and, to prevent its being employed in adulterating cinnamon of a good quality, they were on some occasions obliged to burn it.

On some occasions the Ceylon Government has directed oil



to be extracted from the cinnamon, whose quality did not permit it to form part of the Company's investment. The process is simple: the bark is grossly powdered, and macerated for two days in sea-water, when both are put into the still. A light oil comes over with the water, and swims upon its surface, and a heavy oil, which sinks to the bottom of the receiver. The light oil separates from the water in a few hours; but the heavy oil continues to precipitate for 10 or 12 days. The heavy oil, which separates first, is about the same colour as the light oil; but the portion which separates last has a browner shade than the supernatant oil. In future distillations the saturated cinnamon-water is advantageously used, added to sea-water, to macerate the cinnamon. 80 lb. of newly-prepared cinnamon yield about  $2\frac{1}{2}$  oz. of oil, which floats upon the water, and  $5\frac{1}{2}$  of heavy oil. The same quantity of cinnamon, if kept in store for several years, yields about 2 oz. of light oil, and 5 oz. of heavy oil.

The prepared bark of the *laurus cinnamomum* has received a variety of appellations. It has, however, been chiefly known by the terms cassia and cinnamon. The derivation of neither of these terms is well ascertained. It has been asserted that the term cassia, joined with the Hebrew word *khenah* (which signifies a pipe), is the original of what has been rendered cinnamon in the 30th chapter of Exodus, and that the word rendered cassia by our translators is *kiddah*, from *khadh*, to split or divide longways. We read in Herodotus, that cassia grew in Arabia, but that cinnamon was brought thither by birds from the country where Bacchus was born, that is, India. The term used by Herodotus to specify the last of these substances indicates the cinnamon we now have, for it signifies the rind separated from a plant,\* and evidently points out the bark, under which form we still receive this spice.

\* Vincent's Periplus of the Erythrean Sea.—The extreme ignorance of the ancients respecting cinnamon may be guessed by the account Herodotus has given of the manner cassia and cinnamon were collected. He tells us that cassia grows in a shallow lake; and that round the borders of this lake there are a number of winged animals resembling bats, which are very strong, and utter the most piercing and dismal cries. The Arabs take great care to defend their eyes from the attacks of these animals, and drive them

Galen was of opinion that cassia and kinnamomum were the produce of different species of plants. He, however, finds great difficulty in marking the distinctions. He says that cinnamon resembles the best cassia; and avows that they are so much alike that it is not an easy matter to distinguish them.

The cinnamon mentioned by Galen appears to have been small shoots or branches, which were sold, wood and bark together; *xylo cassia*, *cassia lignea*.

The ancients enumerate a variety of sorts of cassia. Some of the terms employed to denominate this spice specify the mart, or port, where it was to be found; some a particular character or quality; the origin and import of others are undetermined. Ten different sorts are mentioned in the Periplus:—1. Mosylitick, from Mossylon, a port to which it was brought. 2. Gisi; small, esteemed the best. 3. Ordinary. 4. Aroma; sweet-scented. 5. Mayla. 6. Molo; both unknown. 7. Sclerotera; hard. 8. Duaka. 9. Kitta. 10. Dacar: all unknown. The two leading species of this spice appear to be the cassia fistula, pipe cinnamon, and cassia lignea, the tender unbarked shoots. Cinnamon, according to Doctor Vincent, is in a number of languages specified by a term which signifies a pipe, or is accompanied with a qualitative bearing this import. *Khinemon besem* (Hebrew); *cassia syrinx* (Greek); *cassia fistula* (Latin). Many of the modern languages omit the substantive, cassia, and specify cinnamon by the conditional adjunct of the ancients. Ca-

away: after this precaution, they collect the cassia. Cinnamon is collected in a still more surprising manner. The Arabs themselves do not know from whence it comes, nor the country which produces it. Some people assert that it grows in the country where Bacchus was born; and their opinion is supported by strongly probable circumstances. They relate that some very large birds collect quantities of the sprigs and small branches of the plant which we call cinnamon, a name we have borrowed from the Phenicians. These birds construct their nests with the cinnamon twigs upon mountains inaccessible to man. To procure the cinnamon twigs, it is asserted that the inhabitants of the country adopt the following artifice. They take the dead carcasses of bullocks, asses, or carrion of any kind, and cut it into large pieces, which they place near to the situation where these birds have constructed their nests. The birds immediately pounce upon this prey, and bear it to their nests, which are not in general strong enough to support this load; the fabric divides; and the pieces of cinnamon fall down, are collected, and eventually exported into foreign countries.

nella (Italian), from canna (Latin), a reed; cannelle (French); kaneel (Dutch); caneel (Danish); canel (Swedish); canela (Spanish); canelle (Portuguese); kanehl (German).

The word *cassia* is by modern authors used in a variety of senses; but as they do not always define it, or explain the specific nature of the substance they intend to describe, it is often difficult to know in what sense they have adopted the term, or to comprehend the nature of the article concerning which they have been writing.

This makes the subject extremely embarrassing. It is, however, very generally used in one or other of the three following meanings. 1. To denote the prepared bark of the *laurus cassia*. 2. To specify the cinnamon procured from thick shoots, or large branches, of the cinnamon-tree, employing it as synonymous with the appellation coarse cinnamon. 3. To denominate the produce of the *laurus cinnamomum* found in various countries, and to distinguish it from the cinnamon produced in Ceylon.

With regard to the first specification, it is sufficient to mention that the *laurus cassia*, dawul kurundu, has been already described, and the distinction between it and the *laurus cinnamomum* pointed out. It is never decorticated. As to the second, it is well known that the rejected cinnamon, or third sort of that prepared in Ceylon, has been imported into England, and sold under the denomination of *cassia*.\*

The third specification seems to be founded in a supposition that the *laurus cinnamomum* found out of Ceylon is not equal to that which is produced in this island.

The cinnamon plant abounds in various parts of the world; and we have the assertion of people apparently well able to judge, that the cinnamon produced in some of these places is equal to the finest prepared in Ceylon.

Cinnamon seems to be confined to the torrid zone; at least

\* The true cinnamon, such as we at present receive, is the produce of young shoots of the cinnamon-tree; and that which we call *cassia* is the prepared bark of old branches of the same kind of trees. *Cassia* is harder, and more woody, than cinnamon. The ancients made use of this quality of cinnamon bark, but we at present reject it.—(See French Encyclopedia, Art. CINNAMOME.)

we have no good authority for supposing that it is found much beyond it. Spielman says it is found in Tartary; and many authors have asserted that it grows in China. Spielman's assertion is not supported by any authority which I have seen; and Sir G. Staunton tells us that, with the exception of the camphor-tree, none of the laurel genus grows in China. Osbeck does not include it in his *Flora Sinensis*.

Cinnamon abounds on the Malabar coast;\* the island of Sumatra, particularly about the Bay of Tapanooly;† Cochinchina; Tonquin,‡ where it is an article of royal monopoly; the Soolow§ Archipelago; Borneo; Timor; the Nicobar and Philippine islands;|| the island of Floris,\*\* and Tobago.†† It has been cultivated in the Brazils,‡‡ the isles of Bourbon and Mauritius, the Sichelle islands, Gaudaloupe, Jamaica, and the northern Circars,§§ the island of Du Prince||| on the east coast of Africa. The cinnamon plant was introduced into Guiana, in the year 1772, from the Isle of France; subsequently it was transported into the Antilles. In Guiana the inhabitants cultivated it in their gardens, and round their cottages. They prepare cinnamon sufficient for domestic purposes, and transmit a small quantity to France.\*\*\*

Prior to the year 1790 it was introduced into Cayenne by the French Government at a very great expense, and recommended to be cultivated by the colonists.††† Père Labat is of

\* Nieuhoff, Rheede, Dr. Buchanan, &c. &c. &c.

† Marsden's Sumatra, Eschelskroon.

‡ Loureiro *Flora Cochinchinensis*, Abbe Rochon's *Voyage to Madagascar*, &c. &c. Pinkerton.

§ Duple.

|| Ribeiro's *Account of Ceylon*, De la Harpe's *Collection of Voyages*.

\*\* Nieuhoff.

†† Posthuma's *Commercial Dictionary*.

‡‡ Jerome de Merolia's *Voyage to Congo*; Ribeiro.

§§ Dr. Forster, Dr. Wright, and Dr. Dancer. In 1785 there were 3000 cinnamon-trees of Ceylon in the Isle of France. (See a Report by M. Ceré, the Superintendent of the Botanical Garden.)

||| Les Portugais ont planté quelques cannelliers tirés des Indes Orientales dans l'Isle du Prince, sur la côté d'Afrique, ou ils se trouvent maintenant en abondance, et se sont étendus sur une grande partie de l'Isle. (See Laurier, *French Encyclopedia*.)

\*\*\* Memoir by L. C. Richard in the *Memoirs of the French Institute*.

††† Report by Jussieu and Desfontaines in the same work. Cinnamon



opinion that the bois d'Inde of the French West India Islands is the same species of plant with the laurus cinnamomum.

The etymology of the terms cinnamon and cassia is not very evident. We are informed by Ribeiro that the Portuguese historians derive the first from the Chinese word sin-ha-mama, which is said to mean the foot of a pigeon. This derivation is not satisfactory.

To investigate the origin of a term employed to specify an article of commerce, it is particularly necessary to examine the language of the inhabitants of the countries which produce it, and of the merchants and seamen who trade in the commodity. The consumer very generally adopts the term given to a substance by its cultivator. Sometimes the term employed implies the country of the people who are its importers. It has been asserted that the Chinese were very early and extensive traders in the Indian seas; and Ribeiro, on the authority of the Portuguese historians, states that they imported spices into Ormus, and other ports in the Arabian Gulph. He tells us, also, that the Arabians give the appellation of dar Chini Seylane (the China wood of Ceylon) to the cinnamon produced in Ceylon; while they apply the term kerfah to the cinnamon produced on the coast of Malabar, and other countries.

The Persian appellation for this commodity is dar Chini. The Hindoostanee term for it is dar Chinie. This term might have been applied in consequence of the Chinese importing cinnamon into distant ports; or perhaps, more probably, from merely supplying the merchants with it when they arrived at any of the ports of China. Cinnamon was for a long time imported into Europe under the appellation of China wood.

Herodotus tells us that the term used by him to specify cinnamon was adopted by the Greeks from the Phenicians. Their country, however, did not produce cinnamon; but as they were industrious merchants, and extensive navigators, they may have imported it from the countries where it grew, either in their own ships, or in those of other nations. "Traders from the

has been successfully cultivated in the island of Dominica by a Mr. Buée. The same gentleman has succeeded in propagating the Clove-tree in Dominica.

Arabian coast had probably in all ages frequented the eastern seas, although no record of their voyages of an earlier date than the ninth century has been preserved.”\*

In Cochin China the cinnamon plant is termed cay quc. The Chinese appear to have adopted this term, but in some degree modified; they call it kuei chau, which, when pronounced by a native of China, sounds like the word qui sheu or qui chou: chou in the Chinese language signifies a tree. That the term employed by the Chinese to specify cinnamon has a foreign derivation, is extremely probable; as it appears that cinnamon is not indigenous in China. It appears very probable that the term cassia has been derived from either the Cochin Chinese or Malay languages.†

The Malays specify cinnamon by the term kayu manis (sweet wood). Marsden renders it kulet manis (sweet bark or rind), which may be the appellation employed by the higher classes. The vulgar, however, term it kayu manis. There is a considerable consonance in the pronunciation of the terms cassia, cay, and kayu, all indicative of the same substance.

The Malays were in early ages an active, enterprising, and commercial people. Their language is very generally employed in the districts bordering on the sea coasts of the islands of the eastern Archipelago, the Malay peninsula, Sumatra, Java, &c. These countries abound with cinnamon, which the Malays exported probably in their own ships, or furnished the merchants of other countries with it, in the ports of the districts where it is found most abundant. This they now do; and foreigners would very probably adopt the Malay term for

\* Marsden's Introduction to a Grammar of the Malay Languages.

† Valentyn derives the term cassia from Cassia, the name of an island in the Persian Gulph, which was for a long period a depot for the productions of India. Here the merchants from Europe found cinnamon, which, according to this author, was by the physicians termed cassia lignea (cassia wood). According to Dodoneus, Galen once saw a branch of a tree, one end of which yielded cinnamon, and the other cassia. The same author informs us that Theophrastus and Pliny confidently believed that cassia and cinnamon were the produce of the same species of plants, and that whatever difference existed between them, they supposed arose from the circumstance of the former being procured from trees which grow on the hills, and the latter from those which grow in the valleys.

the article; and by this means, through a succession of traders, the Phenicians, and eventually the Greeks, may have received the term cassia and cinnamon. Cassia is not improbably a corruption, or foreign pronunciation, of the Malay term kayu (wood), omitting the qualitative adjunct manis (sweet); and the kinamon of the Greeks may be derived from kayu manis, altered by incorrect pronunciation, or erroneous transcription. The vowel *y* in kayu has the power of a consonant, and in this word has a soft nasal sound, resembling in no inconsiderable degree the usual enunciation of the letter *s* in cassia. Orally the Malays frequently confound the sounds of the vowels *o*, *u*, and *a*. They often pronounce the term kayu manis as if it were written kaynomanis or kainamanis, which terms do not differ materially from the ancient kinnamon, or the modern cinnamon, either in the letters, or in the mode of utterance: and they certainly specify the same substance. It is worthy of observation that Moses employs the term sweet (manis) cinnamon.

## SELECTED REVIEWS.

*A Treatise on the Medicinal Leech, including its Medical and Natural History, with a Description of its Anatomical Structure; also Remarks upon the Diseases, Preservation, and Management of Leeches.* By JAMES RAWLINS JOHNSON, M. D. F. L. S. Member Extraordinary of the Royal Medical Society, Edinburgh.

[From the Annals of Medicine and Surgery, for June, 1816.]

No animal more deserves the attention of medical men than the leech, as it is not only a subject of comparative anatomy and physiology, but a most important remedy; and a wag would add, perhaps,—as it is likewise a namesake.

“The learned *leeches* in despair depart,  
“And shake their heads, desponding of their art.” DRYDEN.


The present little work is very industriously and carefully written. It is divided into four sections. The first contains the medical history of the leech; the second, the natural history; the third, an account of the anatomical structure; and the fourth, an account of the diseases, preservation, and management of leeches.

We do not find the employment of the leech mentioned before the time of Augustus. Themison highly extols it, and was in the habit of applying cupping-glasses afterwards, to withdraw as much blood as possible. Pliny recommends it in the gout. It has been subsequently never omitted among the remedies of medical writers. The ancients had of course a great many silly errors respecting the leech, but it appears from Pliny that they knew as well as the moderns how to induce it to stick, by puncturing the skin, or by smearing it with blood or milk; and how to extend the utility of a single leech, by snipping off its tail (a practice very lately brought forward as new), so that as the blood dropped away from the wound, the animal, *non missura cutem nisi plena cruoris*, endeavouring in



vain to fill itself, would continue sticking and sucking for a great length of time. If aldermen could bear snipping like leeches!

The natural history of the genus *hirudo* is confused. Some animals are often called leeches, which are not really so nor admitted as such by eminent naturalists. These Dr. Johnson constitutes into a genus entitled *Glossiphonia*, characterized by "a body depressed and rather oval, a pointed head, a tubular tongue, progression by alternately fixing the head and tail." The character given of the genus *hirudo* is "an oblong roundish body, truncated at each extremity, hornless, cartilaginous, progression by dilating alternately the head and tail." Its species are found in the sea, or in rivers and pools. Of the former there are, according to our author, six—the *Hirudo Indica*, *H. Grossa*, *H. Hippoglossa*, *H. Bronchata*, *H. Muricata*, *H. Verrucosa*; of the latter no less than ten—*H. Medicinalis*, *H. Sanguisuga*, *H. Troctina*, *H. Nigra*, *H. Vulgaris*, *H. Tessulata*, *H. Lineata*, *H. Heteroclyta*, *H. Geometra*, *H. Marginata*.

The definition of the *Hirudo Medicinalis* is, "depressed, black, marked above by six yellow lines, with black intermediate arches, and below, ash-coloured, with black spots. Ten eyes, thus arranged.  Length, three inches. In pools and marshes. Its *head*, when at rest, rather round; during progression, pointed. *Mouth* changeable in figure, with generally a triangular opening; *Tail* circular, flattened, with fleshy fibres diverging from the centre."

The horse-leech, *H. Sanguisuga*, "is long, of a greenish brown, below of a greenish ash colour, with black spots."

The leech so much employed lately in the deficiency of the common leech, Dr. J. calls *H. Troctina*, from resembling the trout in its coloured rings or spots, and from being usually known by the name of trout-leech. It is "long and brown, above has golden rings surrounding black spots, its lateral margin rather yellow, and below is of a greenish yellow, with black spots."

The medical leech is common throughout Europe, but more in the south than in the north; and from the draining and cultivation of so many waste lands, we are indebted chiefly

to the Continent, and especially Bourdeaux and Lisbon, for our supply. It is said, that we use at least a hundred foreign leeches to one of our own.

The predominant colour, or ground of leeches depends, like that of the toad, very much upon the soil in which they are found.

Leeches swim like eels, but on a solid surface they proceed backward or forwards, by alternately fixing the sucker at the head and tail, and alternately contracting their longitudinal and circular muscles; the former of which draw the body towards the point of attachment, and the latter extends the body from it.

In winter they inhabit deep water, in summer the shallows. In very severe or dry weather, they retire to a great depth in the earth, leaving an aperture leading to their habitation. When the water is agitated, they retire from the sight, and before thunder they usually come up to the surface, and leech-gatherers take this opportunity for catching them. That they are very much affected by the weather is indisputable. Cowper extols the leech as his best barometer.

The food of the medical leech is said to be worms, the larvæ of aquatic insects, &c. This Dr. Johnson allows to be true in regard to the horse-leech; but he maintains, from his own observations, that the medicinal and trout-leeches subsist by feeding on the fluids of fish, frogs, &c.

"Having procured a frog, I placed it in a vessel containing half a dozen leeches (*H. Medicinalis* and *H. Troctina*), in which floated a piece of deal. The poor animal finding itself surrounded, made every effort, but ineffectually, to reach the upper part of the float, while its enemies pursued it with more than common activity. At length, one of the leeches settled on the back, and the others affixed themselves to the legs. On the following morning the frog was found dead, presenting, on different parts of its body, no less than eighteen wounds, all bearing the usual triangular appearance.

Being in possession of a common water lizard (*Lacerta Palustris*), I placed it in a vessel with four medicinal leeches. The leeches swam about unconcerned, and the lizard was removed in the course of a few hours, untouched. This indifference on the part of the leeches, I attributed to their late

feast upon the frog. Four days afterwards, I replaced the lizard, which had then lost some of its activity, in its former situation, and had scarcely time to cover the vessel, before two of the leeches began the attack by wreathing themselves around their prey, for the purpose of securing a firm hold. In a few minutes, a wound was inflicted. The lizard, hitherto motionless, now struggled violently to release itself. This struggle was continued at intervals, but without effect, for about half an hour, when the lizard yielded to its fate.

"I have frequently placed the common earth-worm (*Lumbricus terrestris*) in vessels with medicinal leeches, but never found it to receive the slightest injury; which is the more singular, as the earth-worm contains red blood, a fluid for which the leech shows great partiality. I have also presented to them different kinds of aquatic larvæ, but never observed the least disposition on their part to injure them. So far otherwise, that I have often witnessed the larvæ of the larger water beetle (*Dytiscus Marginalis*) in the act of seizing the leeches by means of their mandibles. Hence it is sufficiently manifest, that neither the earth-worm, nor the larvæ of aquatic insects, constitute their food."

Dr. J. made analogous experiments with the horse-leech, and found it excessively voracious and fond of solid food, which it very quickly digested; as, indeed, might be expected, from its intestine being double the width of the intestine of the medicinal or trout-leech, and its stomach being not so thickly set with membranous folds.

"I procured a large-sized medicinal leech, gorged with blood, and presented it to about thirty horse-leeches. As soon as the medicinal leech saw the others in motion, it endeavoured to avoid them by swimming to the surface. It was, however, in a little time seized upon, and dragged to the bottom of the vessel. In a few minutes, the water had assumed a bloody tinge, and the leech was quickly deprived of life. To ascertain whether the medicinal leech was destroyed merely from the natural ferocity of its enemy, or to serve as food, I repeated the experiment, taking care previously to feed the horse-leeches with earth-worms. This done, I presented to them two medicinal leeches, which immediately swam to the sur-



face, and attached themselves to the upper part of the vessel, in order to avoid their enemies. This effort, however, might have been spared, for the *H. Sanguisuga* did not make the slightest attempt to molest, or in any way to injure them; it is therefore evident, that they are destroyed solely for food.

"I counted, in a glass vessel in which they were contained, sixty-five horse-leeches. Five days afterward, I found the number reduced to fifty-two. No less, therefore, than thirteen had, in the short space of five days, been destroyed; not even a vestige was left to denote their former existence.

"Two of the common rivulet leeches (*H. Vulgaris*) were presented to a horse-leech. In a short time, I observed the head of one of the former in the mouth of the latter, who, by the force of suction alone, drew the whole animal into its stomach. This operation took up a quarter of an hour. Its gluttony, however, was not satiated until it had swallowed the other. Three days afterward, one of these leeches was thrown up in a living state, appearing to have suffered but little injury from its confinement, and was, after the lapse of a few hours, again swallowed.

"Desirous to ascertain how many of the smaller leeches would be swallowed in a given time, I kept two horse-leeches in separate vessels for a month, supplying them constantly with the *H. Vulgaris*, both in its dead and living state. During the whole of this period, I must observe the water was turbid, notwithstanding its occasional renewal, from the vast disengagement of fecal matter, which floated about, having a thread-like appearance."

The one leech swallowed from June 10 to July 9, fifteen; the other, twenty.

"On the 15th of June, three *H. Sanguisuga* swallowed three *H. Vulgares*. On the 20th, I opened the three, and could not, in two, trace the least vestige of a leech. In the third, I found a leech about half digested, surrounded by a fluid, in colour of a deep brown. The intestine in the others was filled with a similar fluid, but much thicker in point of consistence."

Leeches have been said to possess great powers of reproduction. Dr. Shaw made experiments upon the smaller leeches,



the *H. Stagnalis*, *H. Complinata*, and *H. Octoculata*, in 1773, of which he says (Linn. Trans. vol. i. p. 95):

"These animals were divided in every possible direction; and the divided parts, after reproduction, were again subdivided, and again reproduced, without the failure of one single instance."

These experiments Dr. J. repeated, but in every instance failed. When only the head, or the head and tail, were removed, there was not the least tendency to reproduction.

As to the propagation of the leech, two friends of Dr. J. have witnessed them celebrating the deed of kind. The copulation was, like that of snails, double.

They seldom multiply in confinement; in this particular resembling ants and bees, of the latter of which, the elder Huber tells us, that the queen bee never becomes pregnant in the hive, though surrounded by males; but that if she is allowed to escape, she mounts high in the air, and there celebrates the nuptial rites; and the females of the former are obliged to leave the ant hill previously to fecundation, after which, they return, and remain at home solely occupied in depositing their eggs, during which time, the younger Huber discovered that they destroy their wings, which are then only an incumbrance.

Some have contended that the medicinal leech was oviparous; others, that it was viviparous. Now some species of the plant-louse are both viviparous and oviparous, as Trembley, Bonnet, Reaumur, Lyonnet, Mr. Curtis, and Dr. W. Richardson, have established beyond doubt. The same is the case with the wood-louse (*oniscus asellus*); and, according to Redi, with some flies. Dr. Richardson found, that the mode of production in the plant-louse depended wholly on external circumstances, accordingly as these are favourable to life or not: hence, in autumn, eggs are laid, which hatch in the spring, and singularly enough produce females only, but all impregnated, for one copulation is known to be sufficient for nine generations; and in the spring and summer, the young are born alive, begetting, during the season, five generations. Spallanzani found the animalcules of infusions oviparous and viviparous, besides their multiplication by longitudinal, transverse, and

quadruple divisions of their bodies, detachment of certain parts, &c. Leeches *may*, therefore, be oviparous and viviparous. There is authority on both sides, but greater, undoubtedly, in favour of their being oviparous, to which opinion our author assents.

The leech is very tenacious of life. It will not only live, as was mentioned above, after the removal of its head and tail, but for many days in an exhausted receiver, and in distilled water.

Dr. J. found them to live in a glass vessel, containing  
3 cubic inches of hydrogen gas . . . 2 days, 12 hours.

carbonic acid . . . 0 5

nitrogen . . . 8 0

atmospheric air . . 10 0

oxygen gas . . . 12 0

water, strongly im-  
pregnated with Car-  
bonic acid gas } 0 4

olive oil . . . 1 16

spring water, the  
vessel being well } 7 0  
corked . . . }

Bibiena found them recover after suffering contraction, from being placed in a vessel surrounded by snow; but they died when frozen by the more intense cold of a mixture of salt and snow.

Leeches have been known to live in confinement, when full grown, eight years; and as they grow very slowly, Dr. J. conceives they may live in natural situations, at least twenty years. Whether this is not too long a period to assign to their life, we cannot say.

In treating of the anatomy of the leech, the external structure is first considered, then the organs of sense, afterwards the respiratory organs, and, finally, the internal structure, which is very remarkable.

The body of the leech is composed of a number of rings, or annular muscles, which, with use, grow in size, but not in number, as hitherto has been supposed.

1. The mouth, or rather, portion formed by the upper and



under lips, is of a circular or horse-shoe form, and acts, when attached to any substance, as a sucker, by means of the muscular apparatus at the upper part of the œsophagus. There is another sucker at the posterior extremity.

There are two openings in the belly. The one termed generative, round and small, placed about an inch and a half from the lower lip, and containing the penis in a sheath. The other a quarter of an inch behind the first, extremely small, termed vagina, and leading to the uterus.

There is a third foramen in the back, a little above the rim of the posterior sucker. It is the anus.

2. The eyes are ten in number, ranged in a crescent form at the pointed extremity on the back of the head. Touch probably resides in the margins of the suckers. Taste at the upper part of the œsophagus. Hearing, we discover no organ of. Smell Dr. J. imagines to reside at the breathing holes.

3. Some naturalists regard the leech as breathing by the mouth, others by *puncta respiratoria*.

Although leeches live some time when immersed in oil, earth worms, which are known to breathe by *spiracula*, do the same; and Dr. J. found a leech live as long after a string had been tightly drawn around its head, as when immersed in oil.

4. As to the internal structure, they have an epidermis, cutis, muscular coat, and membranous coat, with intervening cellular substance. The epidermis is cast every four or five days. The fibres of the muscular coat are both longitudinal and circular. The membranous coat lines the whole internal cavity.

The pincers are three in number, rounded, cartilaginous, have sharp edges, resting on small eminences, and meet in the centre under equal angles. Poupert thought the wound was produced simply by suction, but Dr. J. has found the pincers, which become stiff at the time, buried in the wound, on lifting up the sucker with a pen-knife. He says, they are moved backwards and forwards, gradually making the wound; during action, they are in constant oblique motion from side to side.

Around the œsophagus is a nervous ganglion, which distributes filaments to different parts of the body.

The blood-vessels have red contents. What has been considered as a nerve, Dr. J. has found to be really a blood-vessel,

which he denominates the abdominal vessel. It proceeds in a straight line from the mouth to the tail, expanding into a diamond form in several points of its course. There are also two lateral blood-vessels, and one dorsal, all four anastomosing by irregularly distributed transverse branches. These Dr. J. has seen pulsating, but could never discover, like Durandean, any thing like a heart.

The leech is hermaphrodite, but whether capable of self-impregnation, is unknown. Besides testes, and uterus, and ovaria, there are many abdominal vesicles, containing a fluid like that of the testes. The lateral vesicles are about thirty in number, and usually regarded as organs of respiration; but as far as our author has remarked, they merely secrete that unctuous matter with which the body is covered, preventing it from being easily seized, and preserving the pliability and elasticity of the rings.

The œsophagus is about a quarter of an inch in length. The cells or stomachs, are from eighteen to twenty-four, and run along four-fifths of the body. The alimentary canal runs between the rows of stomachs, and the intestine beginning from the posterior edge of the opening to the last cell, is about an inch in length, has a valve at its anterior part, to prevent the regurgitation of the fæces, and a sphincter to prevent the escape of a plenteous repast.

In some parts, persons occupy themselves solely in furnishing and applying leeches. The leeches are thus afforded at least as cheap as from the shops, and the animals being properly taken care of afterwards by the persons to whom they belong, do not suffer that prodigious destruction which occurs in London. We wish heartily with Dr. J. that this custom was as general as possible. If leeches are kept out of water an hour at least before application, they are rendered much more voracious. If they adhere to a wrong part, they may be removed by inserting the nail between the mouth and the patient's surface. They fill in about ten or fifteen minutes, and often adhere indolently, but may be roused by sprinkling them with cold water. Snipping their tails while sucking, makes them suck for a longer period; but it renders the leech some



time afterwards extremely languid. The best mode of making a leech disgorge, Dr. J. says, is, to pour a little vinegar upon its head.

Leeches are liable, especially in hot weather, to ulcers, constrictions, and flaccidity. A healthy leech is firm in the hand.

Such is this work, which reflects great credit upon its author.

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MEDICAL JURISPRUDENCE. *Foderé Médecine légale*, 8vo.  
6 vols. Paris, 1813.

[From the Journal of Science and the Arts. No. V.]

OUR attention has been directed to the science of Medical Jurisprudence or *State Medicine*, as it is termed in Germany, by some recent publications of considerable merit. As a science it is not known in this country, nor does it form any part of the necessary studies of the medical practitioner. In the present Paper, we shall point out what we consider to be its leading branches; and we are so convinced of the benefit which would result to mankind from a more general attention to this science, that we shall not apologize for having entered on a subject which may probably be considered not to be immediately within the limits of our journal. The science of Medical Jurisprudence comprehends the evidence and opinions necessary to be given in courts of justice, by practitioners, on all subjects relating to their profession: according to the English laws, the testimony or the opinions of medical men are not directly required, though it is usual in certain cases, to require their evidence on professional subjects: public attention has been of late called to the laws now in force relating to coroner's inquests, and the mode in which they are administered. This subject is intimately connected with Medical Jurisprudence. Without wishing to discuss the propriety of the laws for the punishment of suicide, so far as they relate to the forfeiture of property, and the giving publicity to the offence; there can be little question but that the exposure of the body of the suicide is not consonant to the

feelings of the present age: and yet it cannot be forgotten, that within a short period the body of an unfortunate wretch was, in open day, dragged in procession along the public way, headed by the civil power. Very slight evidence, or rather no evidence at all, but merely the discretion of the coroner, is sufficient to procure a verdict of lunacy; and that such verdicts are often corruptly procured, no person who has attended to the proceedings of coroners inquests, can have any doubt. It may be questioned whether an ignominious burial has any direct tendency to the prevention of suicide; and unless it is clearly established that it has, in an enlightened age, like the present, so barbarous and disgusting a law should be abolished, or at least why should not the very fact of suicide be considered in *all* cases, as affording evidence of insanity? It is of the utmost importance to the due administration of justice that the evidence before the coroner should be complete and correct. To insure this, it will be requisite that enactments should be made, at once regulating the mode of producing such evidence, and the class of persons by whom it is to be given. Several instances of the grossest neglect and irregularity in the evidence of medical persons have come to our knowledge; the following is one of the most flagrant:—a servant had died in consequence of poison; it was supposed she had taken it purposely, though she stated that it was taken by her as a dose of salts which had been carelessly left about by another servant: there was, however, reason to suspect that she had been pregnant, and had lately miscarried. The prejudice was considerably excited in favour of the deceased having taken the poison accidentally. Two medical gentlemen of eminence attended to examine the body; the apothecary who was to give evidence before the coroner, was also in attendance; and as, from the early part of the examination, there was little question but that the woman had been pregnant, on the examination proceeding, the apothecary actually left the room, stating, that as he was to be examined before the coroner, if he gave any evidence which might seem prejudicial to the character of the deceased, it would seriously affect his professional interests in the neighbourhood! Now, in this case, independently of false evidence hav-



ing been in fact given before the coroner, injustice was done to the servant who was supposed to have brought the poison into the house. In order to insure proper attention and skill on the part of medical persons who may be called in to give their evidence before coroners, we should propose, that in addition to the usual course of education, all medical students should be required to attend a certain number of lectures exclusively on the subject of Medical Jurisprudence, in which their attention would be particularly called to those parts of the science of medicine, respecting which they would be liable to be called upon to give their opinions, in courts of justice, with peculiar directions as to the nature of the proof required, and the effect of their testimony. In addition to this, we conceive much benefit would arise from the prescribing particular rules to be adopted in all cases of sudden or suspicious death; and making it imperative on the coroner to employ particular medical persons (who should be remunerated;) and for this purpose a certain number of practitioners in each county, who had previously passed such examination as might be thought fit, should be named as the persons to be employed by the coroner; and that every such examination should be made according to certain directions to be determined on, and a report of it in writing signed and sworn to by the person making it. In order to facilitate the mode of making these examinations and reports, certain printed formulæ might be devised, stating the mode of examination to be pursued, and the results; such formulæ, of course, to be varied according to circumstances. This is the mode adopted in France, and in other countries in Europe, and from the adoption of which we conceive much benefit would arise. The reporter might still be examined *vivâ voce*, either before the coroner, or on the trial. Independent of the improvement which would result from this, in the administration of justice, much good would arise from the removal of doubt and suspicion in the public, which is often misled by the evidence given before coroners, on medical subjects, owing to the unfitness of the persons employed. There can be little question, that had the examinations and analysis been skilfully made, no public disturbance or discontent would have arisen in the case of Elizabeth Fenning, who

was executed for an attempt to poison the family of a stationer, in Chancery-lane.

The evidence of medical men, amongst lawyers, is a subject of general animadversion; and indeed it is impossible to refer to the several printed trials, such as those of Spencer, Cowper, Donellan, and others, without astonishment at the inconsistency and uncertainty which seems to have pervaded the opinions of former medical practitioners.

It may also be expected, that much good will result from the canvassing the points necessary to be attended to, in examinations of the nature we have mentioned, and that greater skill will be attained, and important discoveries made, in the application of remedies in cases of suspended animation, the administration of poison, &c., respecting which, little attention seems to have been paid by the generality of the present practitioners, at least those of the second class; and it is amongst the second class that skill and knowledge in this branch of science is particularly required, as they are most frequently called upon in cases of poison, &c.

The first directions respecting the consulting medical men, in the administration of justice, in any modern code, is in the *Constitutio Criminalis Carolina*, of Charles V. which enacts, that the evidence of medical men shall be taken in cases of violent death, poison, child murder, &c.; and now by the laws of most of the States in the Continent of Europe, their evidence is required in similar cases. The code Napoleon, one of the most singular productions of modern Jurisprudence, gives, at considerable length, the rules to be observed in making the necessary reports, and in the testimony on medical subjects connected with Jurisprudence.

The most distinguished works on this science, amongst the Germans, are, the *Pandectæ Medico-legales*, of Valentini, 1702; the works of Plenck, Frank, and Sikora, together with the *Colatio Opusculorum Selectorum ad Medicinam Forensæ spectantium: curante Schlegel*, 1787,

Amongst the Italians, Paul Zacchias is most distinguished. Ambrose Paré was the first in France who treated on this subject; and the *Médecine légale et Police médicale*, of M. Mahon; "the Course of Legal Medicine," of M. Belloc; the



Médecine légale of M. Foderé, and the toxicology of M. Orfila, are amongst the most eminent of the modern French works on the subject. In this country, with the exception of the Lectures of Dr. Duncan, of Edinburgh (where there is a professorship for the study of Medical Jurisprudence) we have no publication of any note, although there are several Essays, on particular subjects relating to Medical Jurisprudence, of considerable value. Amongst the foremost, is to be reckoned the Paper of Dr. W. Hunter, on the uncertainty of the signs of murder in bastard children.

We shall conclude our remarks on this subject, with a concise enumeration of the subjects embraced by the science of Medical Jurisprudence, which we shall notice in the order in which they are treated of in the work of M. Foderé, which, though very prolix, and written without either great professional skill or talent, contains much curious information on the science, as well as the opinions of most of the preceding writers on the subjects discussed.

The *physical qualities* of man, form one of the first and most important subjects of enquiry. According to the laws of all civilized nations, there are certain fixed epochs when reason is to be considered as sufficiently developed for the exercise of certain acts; such as the dominion over property—union of sexes—holding of offices, &c.—Majority is to be considered a civil institution, varying in different nations and climates. In the debates on the code Napoleon, no point was more discussed, than, whether the period of majority should be fixed at 21 or 25; but the former was determined on, except in the case of power to contract marriage, and the discharge of some particular functions. Many cases may arise, and have arisen in this country, in which the age of a party is only to be ascertained by presumption, and it is obvious, that the opinion of medical men on this subject, must have considerable weight. A considerable portion of the first volume of M. Foderé's work, is taken up in discussing the physical powers of man, at different ages, as far as regards his legal capacities—the commission of crime, and infliction of injury. The *Médecine légale* of M. Foderé contains a very detailed commentary on the code Napoleon, which, like many other

codes, attempts to establish a scale of the physical powers of man, by which their faculties and incapacities are to be ascertained. Zacchias, one of the most sensible writers who have considered this subject, which it seems, has (fruitlessly enough, in our opinion,) occupied the attention of many jurists and medical writers, admits that the legal period of age must arise from arbitrary presumption, rather than from any rules resulting from observation of nature, whose variations are infinite.

Many important points arise on the question when the period of gestation ceases: from 45 to 50 is the ordinary time, though there are exceptions. This point was much canvassed in the Douglas cause. Haller, speaking upon this subject, mentions many women who have borne long after 50, and who, it may be said, experienced a sort of second youth—have borne, as he states, up to 70. The English law admits of no presumption, as to the time when a woman ceases to have children, though this enters into most other codes. In England, property, which reverts to the parents, in default of issue, is frequently tied up till after their death, though the moral probability of their having issue may long have ceased.—Many curious points seem to have arisen in France and other countries, with respect to identity; and the subject, in all the treatises, is noticed at considerable length.

The next point is, the relative and absolute duration of life. In case of absence, the English law admits of great latitude; and as each particular instance is determined by a jury there is very little certainty as yet established; great practical convenience, however, would result from fixed rules on this subject.—The relative mortality of the sexes is also considered, at length, by M. Fodéré.

The presumption of survivorship, amongst persons perishing by the same mischance, as shipwreck, suffocation, &c. when no positive evidence can be procured, as to the exact periods of their death, is also another point of which the foreign jurists have written much, but respecting which, we have no positive rules in this country. It frequently becomes a question of considerable importance, in the devolution of property, to ascertain which of two persons survived; as parent or child, testator or legatee, &c. The laws of several na-



tions have admitted of arguments, drawn from the relative supposed physical powers of the parties to sustain life, such as are to be inferred from the difference of age, sex, &c.

In imitation of the civil law-codes, the code Napoleon has attempted to lay down particular rules for the devolution of property, in cases of this nature: we extract the following passages:—"persons dying, who are the legal representatives to each other, without it being known which died first, the presumption of survivorship is to be determined by the circumstances of the case, and in default thereof, by the strength, age, and sex of the parties. If those who shall so die together, shall be both under 16, then the *eldest* shall be presumed to have survived; if they were all above 60, then the *youngest* shall be presumed to have survived; if some under 15, and others above 60, then the first shall be presumed to have survived; if all are above 15, and under 60, then the male is presumed to have survived, if the ages are equal, or the difference does not exceed a year; if they were of the same sex, then the presumption of survivorship, according to the order of nature, is to be adopted, and the younger is supposed to have survived the elder." In this there is an odd mixture of arbitrary rules, and an attempt at reaching the probable truth, by a comparative estimate of the physical powers of man; besides, many objections might be made to the above rules; as far as they attempt to regulate *on principle*, the doctrine of presumptions, we conceive, that the simplest law, and the one that would most probably come nearest to natural justice, would be to enact, that in all cases, the order of nature should be presumed to have taken place, and therefore, if father and child died, whatever their probable physical powers, the child should, as in the course of nature, be considered as having survived the father; and so in all cases of succession. The English law, on this subject, is entirely defective, and although there have been questions in which it was necessary to decide which was the survivor, in the absence of all but presumptive evidence, it does not appear that any decision was ever made, or that any principle of law was admitted, either original, or as adopted from the civil code; whereas, if some fixed rule were adopted, parties at least would not be ignorant of the na-

ture of their rights. In a cause lately before the Court of Chancery, which was the case of a legatee and testator being shipwrecked in the same ship, it was sent by the Master of the Rolls to be tried by a jury *which survived*, though he admitted there was a *total absence of all evidence*, on which they could found their verdict; whereas, had some principles with regard to legatees and testator dying, been adopted, no question could have arisen. Notwithstanding the manifest fallacy of all reasoning tending to prove who was the survivor from the relative physical faculties of the deceased, it seems to have been a frequent subject of speculation amongst the writers on Medical Jurisprudence; and a very considerable part of the second volume of Foderé's work, is devoted to the consideration of the modes of ascertaining the probable survivor, in cases of death, by shipwreck, fire, cold, suffocations, &c.

The consideration and study of the different defects of the mind, form an important branch of the study of Medical Jurisprudence. Pinel has divided the diseases of the mind into four classes;—*mania*, or general delirium; *melancholia*, or exclusive delirium; *dementia*, or obliteration of thought, and *idiotism*, or abolition of the intellectual faculties. But the diseases of the mind are so varied, that it is difficult, with certainty, to class symptoms admitting of such infinite variety; however, questions at once involving life and property, are frequently dependent on the judgment and the evidence of the practitioner. From insanity are to be distinguished hysterical affections, the effects of depraved instincts, jealousy and inebriety, excesses arising from sudden accessions of peculiar passions of the mind, and temporary alienations of reason arising from disease. In considering the faculties of man, many curious questions arise on the moral and physical powers of those who are born deaf and dumb, as to their capacity of performing the different functions of life, and how far they are amenable to punishment for the commission of crimes. In this country, these are questions on which a jury alone decide. Another question, in which the testimony of medical men is of considerable importance, is the consideration how far persons affected by disease, executing a will, are to be considered



in a situation to judge of the propriety of the act executed by them.

*Of Marriage.*—Few, if any, questions are now likely to arise in England, relating to the *time* and *capacity* of parties to marry. The subject of marriage involves that of *impotence*, which may be divided into absolute and perpetual, relative and accidental, or temporary, curable and incurable.

*Pregnancy.*—No one part of legal medicine involves so many important questions, as *conception* and *childbirth*; and none are more entangled with difficulties. These points, from their importance, call for the greatest care and circumspection. The signs of conception are divided into rational, particular, and sensible; and notwithstanding the advancement of science, the knowledge both of the one and the other of these signs, is sometimes involved in great difficulty, and frequent errors occur, in the judgment of the most experienced practitioners, even when women have no motive for concealment. The question of superfætation, has given rise to much learned discussion: M. Foderé sides with Buffon, Haller, and the other advocates for it—and thinks it is of rare occurrence, but not impossible. A case of a woman who had twins, one white and the other black, is mentioned by Buffon.

The symptoms of delivery, and how far they are to be distinguished from all other uterine excretions, form another important topic; as also the period of time after delivery, when the symptoms may be ascertained with certainty.—The capacity of women in labour to render proper assistance to the fœtus, so as to preserve life.—The determining whether the fœtus died before, or after delivery—upon this point much difference of opinion exists, and it is deserving of considerable attention, in order to enable the practitioner to do justice in giving his opinion.

*Utero-gestation.*—The next object of discussion, is the period of utero-gestation. In all other animals, the period of utero-gestation is very constant. Haller states, that the time of going with young is very regular in animals, but that it is not so regular in women. He gives references by which we read of a woman going ten, eleven, twelve, thirteen, and even fourteen months. Hippocrates says, that, “he can allow the

possibility of a child being born at ten months, but not later." The former system of France allowed ten months. By the code Napoleon, the legitimacy of a child born 300 days after the dissolution of the marriage, may be questioned.

Dr. Clarke, in his Lectures, published under the title of *London Practice of Midwifery*, treats the possibility of the periods extending beyond the forty weeks with ridicule, though contrary to the opinion of many very distinguished practitioners, and indeed, as some have conceived, contrary to reason; for as the fœtus receives its nourishment from the mother, the probability is, that any very material alteration in her constitution, may cause the retardation, of the maturity of the infant. Besides, the fact of irregularity, in the time of utero-gestation, has been satisfactorily established, in the case of animals, when no motive for prejudice or concealment can arise. With regard to the legitimacy of children born in wedlock, only two reasons are allowed against the legitimacy of the child by the code Napoleon; viz. absence of the husband, or his being affected by some disease, by which it is to be inferred, it is impossible he should be the father of the child. Non-access is the only ground of disputing the legitimacy in England; but the rule of evidence in this respect has been of late very materially altered, by the opinions of the judges in the Banbury peerage, who have, it is conceived, introduced an *anomalous* division respecting the evidence of access, dividing it into *access*, and *generative access*; so that if this distinction be hereafter recognised, much uncertainty may be introduced respecting the title and succession to property, and a new and difficult subject will demand the attention of the medical student.

In discussing the time when the fœtus may be supposed to be perfect, the faculty of Leipsic, with great complaisance, determined that a child, born five months and eight days after the return of the husband, might be considered as legitimate, and that children at five months, were often perfect and healthy. *Valentini*, who reports this decision, is also gallant enough to concur in it.

By the English laws, an husband is entitled to a life interest in the estate of his wife, if he have a child born alive; and

the expression of the old law is, if the child should be heard to cry. Some cases, where children have been born alive, but have not uttered any cry, though they have breathed for a continued period, have caused much learned discussion; and a case in 1806, in the Exchequer, (where the lips of an infant had moved after birth, but no cry was heard,) gave rise to much curious evidence, particularly by Dr. Denman, who was of opinion, that the motion of the lips immediately after birth, was not a decisive proof of the presence of the vital principle, and distinguished between *uterine* and *exterior* life, the latter being called into action by the operation of the air on the lungs. Each case of this nature in England is determined by a jury, on its particular circumstances: according to the civil code, *idem est non nasci, et non posse vivere*.

Till the relaxation of the severity of the laws in this country relating to infanticide, many unfortunate mothers suffered death for crimes they never committed. Prejudice on the part of the juries, and ignorance on that of the practitioners, seem to have conspired to destroy the wretched mother. Dr. William Hunter, in his able paper on Infanticide, was one of the first who had the credit of turning the public attention to this subject. No one has written more eloquently in favour of the female character; and from the opportunities of observation, which his extensive practice afforded him, there is no one whose opinion is entitled to higher respect. Even now, however, it may be doubted, whether there are not some who suffer unjustly, when the incapacity of the mother to assist her infant in a concealed delivery, the probable accidents arising from position, fainting, and delirium, are considered: the horror excited by the idea of a mother's murdering her offspring, may still prevent mankind from judging of the case of the infanticide with impartiality; added to this, the natural appearances have not unfrequently been attributed to violence; and a case has been noticed as having occurred a few years ago, where the sutures and fontanelle were mistaken by an ignorant practitioner, for fractures of the skull. That to form an opinion, which is to decide the fate of a fellow being, on a subject so difficult, and presenting so extensive a field for observation, requires the narrowest scrutiny and attention, need not be no-

ticed; and the probable improvements in our skill respecting these matters, may be easily imagined, when it is considered; how short time since, the lungs, swimming in water, was considered as decisive evidence that the fœtus had inspired air, and which is now admitted to afford, at best, but a very uncertain criterion of the existence of extra-uterine vitality.

The cases of monstrous births have seldom given rise to legal discussion in this country, though the works of foreign writers abound with descriptions of them.

The next class of cases which occur, are, the appearances of death in bodies, and whether the death was natural or violent, as in the case of strangulation, suffocation, drowning, &c. from blows and wounds, &c. and the determining whether particular wounds are to be considered as mortal; after these, come rape, and feigned diseases, the most frequent of which are, epilepsy, insanity, ulcers, and blindness, &c.

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*Remarks on Arsenic, considered as a Poison and a Medicine; to which are added, five cases of recovery from the poisonous effects of arsenic. Together with the tests so successfully employed for detecting the white metallic oxide; in which those satisfactory methods, peculiar to Mr. Hume, were principally adopted, confirmed, and compared with others formerly in use.* By JOHN MARSHALL, Member of the Royal College of Surgeons in London, and Apothecary to his Royal Highness the Duke of Gloucester's Household, &c. &c.

[From the Edinburgh Medical and Surgical Journal, for October, 1817.]

MR. TURNER, Mr. Robert T. and Mrs. R. T. in the 7th month of pregnancy, partook at dinner, on Tuesday, March 21, 1815, about 4 P. M., of some yeast dumplings. Mr. R. Turner ate a dumpling and a half. They seem not to have been sensible of any thing unusual in the dumplings, but soon became ill. We are told, that, at the commencement of the operation of the arsenic on Mr. R. T. his father was alarmed at the alteration in his appearance; the countenance was of a



complete yellow cast, and the features altered and contracted, so as to resemble an aged man. Soon after dinner, a medical gentleman, Mr. Ogilvy, was sent for, who administered to each of them a full dose of castor oil, and gave sugar and water plentifully, occasionally mixed with milk. We are not informed when the cook-maid, Eliza Fenning, became ill, or whether she had eaten of the yeast dumplings.

Mr. Gadsden, Mr. Turner's apprentice, dined on beefsteak-pye at two o'clock. About an hour and a half after finishing his dinner, he ate about the size of a walnut only of the remains of the yeast dumplings, and would have eaten more, but was forbid by the cook-maid. In almost an hour and a half, he became sick, and vomited twice, then felt quite well, and went, on foot, for Mrs. Turner senior, from Chancery-Lane to Vauxhall, a distance of three or four miles: and not until he arrived there was he in the least aware of being poisoned; but he then became seriously ill, with an excruciating pain and a burning heat in the stomach, and felt so much alarmed, that he thought he would have died. As soon as seated in the coach to return, he began to vomit, and continued to do so, almost without intermission, the whole of the way home.

About half past eight, the patients were seen by Mr. Marshall, who thus describes the state in which he found them:

"On entering the house I first saw Eliza Fenning, the cook, lying on the stairs, apparently in great agony, and complaining of a burning pain in the stomach, with violent reaching, head-ach, and great thirst. I directed her to drink some milk and water, and to be immediately conveyed to her bed; at the same time observing, that I would see her again as soon as possible, after having visited the rest of the family, who, I was then informed in the most anxious manner, by Mrs. Turner senior, 'were all four of them much worse than the cook.' My attention was then directed to Mr. Robert Turner, who appeared to be nearly *in articulo mortis*; his face, which had been swollen, having assumed the appearance of the true *facies hippocratica*, my apprehensions were considerable for his preservation. On examining the contents of the utensils in which he had vomited, a fluid was perceived of a yellowish and greenish colour, and in two of them stercoraceous matter; the pulse was

gone, his voice faint and tremulous, and he pointed to the abdomen in great agony. On examination, I discovered a very remarkable irregularity of surface, occasioned by the spasmodic contractions of the muscles of the abdomen, and even of the viscera; this unevenness extended from the epigastric region to the *pubis*, and to the right and left *hypochondrium*; and the excruciating pain was relieved, for a short time, by rubbing the abdomen with a piece of hot flannel and laudanum.”——

“He complained of extreme faintness and dreadful sickness. Mr. R. T. had been violently purged; and, on examining the alvine secretions, the singularity of their appearance excited great surprise; they were all of a bright homogeneous green colour, like paint, and strongly resembled the green colour produced from a solution of the arsenic by one of Mr. Hume’s tests, the ammoniaco-sulphate of copper, which will afterwards be more fully described. Each effort of vomiting and purging was preceded and followed by these painful gripings and spasmodic contractions of the abdominal muscles. Mr. R. T. complained of great heat in the stomach, which the patient compared to a furnace, or red hot irons; which sensation commenced at the tongue, and was felt throughout the course of the *œsophagus* to the *cardia*, or upper orifice of the stomach; insatiable thirst, violent headach, the eyes impatient of light, but the pupils sensible, and the extremities cold. The patient attempted, in this dreadful state, to get out of the bed, to walk to the night table; he was directly seized with vertigo, dimness of sight, and palpitation of the heart; he fell down, and went off into an epileptic fit; he was assisted on the bed, and in a few minutes recovered from the fit.

“Mrs. Robert Turner had great pain and burning heat in the stomach, headach, immoderate thirst, vomiting and purging, with olive green alvine discharges, tension of the abdomen, the face swollen, cold chills alternating with flushings of heat; and light was painful to the eyes. Mrs. R. Turner’s peculiar situation made me apprehensive of a miscarriage, in consequence of frequent bearing pains more or less constant in the loins; and, independently of these distressing symptoms, her mind was additionally agitated by the alarming state of her husband, who was lying by her side..——

"I next saw Mr. Turner senior, with symptoms, in many respects, similar, though not quite so importunate as in the two foregoing cases. Mr. T. had the burning sensation in the stomach, vomiting, inordinate thirst, headach, the face swollen, tension of the abdomen; the purgative symptoms had been more moderate. Mr. T. did not complain of light affecting the eyes; and the countenance was flushed, particularly on the upper part of the cheeks."—pp. 11—15.

Mr. Gadsden complained of a burning heat in the stomach, much nausea and vomiting, and severe gripings, with purging; extreme faintness, palpitation of the heart, headach, and trembling of the right arm and right lower extremity. He was also affected with intolerance of light and strangury, and his fæces were of an olive green colour.

Mr. Ogilvy and Mr. Marshall, in consultation, "resolved to persist in the purgative plan, and gave to each patient another full dose of castor oil, on two table spoonfuls of milk, and every four hours a solution of the *magnesia sulphas* with manna, in mint water; this dose to be alternated every two hours with the saline draught in the state of effervescence, letting the alkali predominate four grains to each dose, with the intention of neutralizing any possible remains of the arsenic, and relieving the disposition to vomit; and we further determined on persisting in the purgative system, until a more natural colour was effected in the alvine secretions. The patients were allowed to drink frequently, and in small quantities, milk, soda water with or without milk, and mutton broth."—"The thirst of each patient was so urgent, that they would readily have drank quarts, had they been permitted; and had we yielded to their request, the vomiting would have been at this time unnecessarily excited, and Mr. O. and myself were apprehensive it might tend to increase the inflammation on the villous coat of the stomach, and augment the symptoms of debility. The thirst was somewhat allayed by frequently washing the mouth with cold water."—pp. 16—18.

Eliza Fenning most obstinately refused all remedies, both on Tuesday night and Wednesday morning. She was then much better, but her face was flushed and swollen, and she

still complained of burning pain in the stomach, headach, and dizziness. She was removed to prison.

"On the following morning, March 22d, I visited the patients, who had all passed a restless night; the vomiting in each had greatly abated, the pain in the stomach was still violent, which they all compared to a furnace, or hot irons; the alvine discharges were changing to a proper colour, but intermixed with streaks of green, and highly offensive; the skin hot and dry, the pulse quick, varying in each case from 100 to 130, great thirst, and violent headach; their tongues white but moist; Mr. and Mrs. Robert Turner, and Mr. Gadsden, could not endure a strong light.

"The supersaturated saline draught *in actu effervescentia*, with the addition of manna, was ordered to be continued, and the purgative mixture to be omitted.

"Mrs. R. Turner's pulse was 130; this rapid circulation was accompanied with constant sensation of fainting; but the bearing pains, with the pain in the loins, had somewhat abated.

"Mr. Gadsden appeared this morning to be the most afflicted; he had been seized with four epileptic fits in the course of the night, preceded by a violent palpitation of the heart, accompanied with a peculiar tremulous action of the right arm, and lower extremity; a considerable degree of symptomatic fever, insatiable thirst, a white but moist tongue, the face flushed, the respiration hurried, pulse 126, irregular and contracted, frequent gripings in the bowels, and spasmodic twitchings in the muscles of the chest and abdomen.

"Mr. Robert Turner, in the early part of the morning, had another attack of epilepsy; the symptomatic fever ran high, the pulse 120; he complained of spasmodic twitchings about the chest and abdomen, palpitation of the heart, great languor, accompanied with a constant sensation of fainting, tongue white, but not dry, occasional chills, followed by an increase of heat, headach, and vertigo. A dose of the purgative mixture was administered, and the same medicine as on the preceding day continued.

"Mr. Turner senior appeared much better; the pulse 90, skin temperate, tongue moist and cleaner; vomiting had sub-



sided, but the stomach was in great pain; he complained of extreme lassitude; the face was flushed, and he had slept about four hours.

"The faces of all the four patients were swollen, with a fixed redness, more or less, under the eyes and on the cheek-bones; they had vomited two or three times in the course of the night, by drinking too copious a draught of the diluents recommended over night, and each complained of the tongue and lips being sore and swollen.

"In the evening the febrile symptoms had a little abated, the pain in the stomach was intense, occasionally remitting and again returning with increased violence, with nausea and vomiting, much pain in the head, considerable thirst, and the bowels were open in each of the patients.

"Mr. Turner senior was better in many respects, and less oppressed by languor.

"The saline draught with manna was to be continued, and the addition of camphire mixture.

"Thursday the 23d, Mr. Robert Turner had slept three hours during the night, the skin was moist and more temperate, the tongue less coated, not dry, but sore and swollen, the burning heat in the stomach rather less violent, and he expressed a degree of hunger; the pulse 98, spasmodic twitches in the arms and legs, with a cold sensation in the latter.

"Mr. Gadsden had much fever, the respiration hurried, great thirst, violent and incessant palpitation of the heart, the fits had recurred twice in the night, he had had no sound sleep; if he went into a doze, he awoke suddenly, and much agitated; the pulse 120, spasmodic twitches, with tremor in the right arm and lower extremity, violent headach, and the eyes painfully affected by light; constant vertigo, which was increased if he attempted to sit up in bed, or upon the slightest exertion. A wine glass full of camphire mixture was ordered to be taken frequently. The patient received so much relief from this, that he asked for it often with eagerness. The saline effervescing draught, with manna and camphire mixture, was repeated every four hours.

"Mrs. Robert Turner has slept three hours in the course of the night; pain in the loins constant, with occasional bear-

ing down of the womb; the thirst rather less urgent, the pulse 110, headach, vertigo, great intolerance to light, the tongue white and moist, the skin hot, frequent palpitations of the heart, and a constant sensation of fainting; a numbness extending from the right side down to the foot; the burning sensation of the stomach was excited and increased by the motion of the child *in utero*; the face was flushed and swollen, and the tongue and lips sore, which extended along the course of the *œsophagus*.

"The same medicine as yesterday was continued, and a wine glass full of camphire mixture taken frequently when faint.

"Mr. Turner was considerably better, the pain in the stomach occasionally troublesome, the appetite returning, the face less swollen, but flushed and red under the eyes and on the cheek-bones, extending towards the ears.

"Friday the 24th, the febrile symptoms had considerably subsided in each of the patients, and they had passed a more tranquil night. They complained of a variety of singular nervous affections, tingling and burning sensations in the hands and feet, in Mr. R. Turner beginning at the extremity of the fingers, and gradually creeping to the shoulders; sometimes one foot, and at others both affected with a burning feel, commencing at the toes, and gradually rising above the ankle joint: palpitation of the heart, great depression of the spirits, with a perpetual sensation of swooning, and frequent twitchings of the muscles of the chest and abdomen, and of the upper and lower extremities.

"Mr. Gadsden had experienced in the night only one attack of the epileptic fit, and had slept three or four hours towards the morning; the pulse 100, the breathing less hurried and more natural. The vomiting in each patient had wholly subsided, but they all endured the burning feel in the stomach.

"Mrs. Robert Turner complained of violent headach, and to light she had still a great objection, as it, immediately on accession, increased the headach; at times the heart palpitated strongly, the thirst was considerable, the pulse 100, the tongue less charged and moist, the child *in utero* moved with vigour,

and whenever this occurred, the pain in the stomach was increased, with nausea.

"Mr. Turner senior was nearly recovered.

"The same medicine continued, with the camphire mixture.

"In the evening they were all four evidently in a progressive state of convalescence; the febrile symptoms diminished, the pulse slower, less tremulous and contracted, more natural and open in the beat: the pulse in Mrs. R. Turner continued at or about 100 for a fortnight afterwards."—pp. 16—24.

"On the next morning, Saturday the 25th, the symptomatic fever in each patient had wholly subsided, their tongues were cleaner, and the nervous symptoms much the same as on the preceding day; the appetite returning, and Mr. R. T. complained of hunger more than the rest. Well boiled vegetables, puddings, eggs, and milk, were recommended, and he was enjoined most carefully to abstain from animal food and fermented liquors.

"Mr. Gadsden had a relapse of the fit shortly after I had left him over night, which had been preceded by palpitation of the heart, and the tremulous agitation of the right arm and lower extremity; the fit lasted near two hours. They all still complained of the burning heat in the stomach: this symptom was constant and more severe in Mrs. R. Turner, who had it without intermission: this was attributed to her peculiar situation, the viscera pressing more constantly upon the tender state of the coats of the stomach; and Mrs. R. T. felt, for many days afterwards, an intolerance of light, accompanied with headach; she persevered in the recumbent position for a fortnight afterwards, which relieved the pain in the loins, and kept off, or lessened, the disposition to the bearing pains of the gravid uterus.

"On the following day, Sunday the 26th, they were all convalescent, except Mr. Robert Turner, who had gone contrary to my directions, by eating at dinner on the preceding day a free portion of animal food, and drinking a tumbler of porter, which caused a slight relapse of the fever; and he endured so much pain in the stomach, that he readily promised not to touch animal food or porter again, until fully permitted. Mr. R. T. had passed a restless night, with much thirst, and was

again attacked with the spasmodic twitchings in the chest and upper and lower extremities; he took a dose of the cathartic mixture, and, by afterwards living on a low diet, and then strictly adhering to my directions, having suffered so severely by this transgression, this patient was soon relieved from the exacerbation of the symptoms."—p. 26, 28.

"Mr. Gadsden experienced an epileptic fit at eight o'clock the preceding night, and it returned daily and periodically, about the same hour every evening, for a fortnight afterwards; the fit generally lasted near two hours, and he required, from the violence of his struggles, the assistance of several persons to hold him whilst the epilepsy continued. On recovering he looked wild, forgot where he was, and talked incoherently; and as he gradually emerged from this state, complained of extreme languor, with great prostration of strength. Towards the latter end of the second week the fit became shorter, and less severe, and he sooner recovered when out of it; and at the expiration of a fortnight from the first effects of the poison, he enjoyed an interval of seven or eight days without a relapse; but they again returned, with the same or even greater degrees of violence, and it is necessary to state, that Mr. G. has been afflicted with the fits up to the present time; he was then about seventeen years of age, appeared to have outgrown his strength, possesses very delicate stamina, and serious apprehensions are still entertained of the result, as the fits hitherto seem not in the least to yield to the remedies that have been employed. I attended Mr. G. about three weeks, but he was obliged to leave Mr. Turner's office, and return to his parents, in consequence of the frequency of the relapse of these fits.

"On the 30th Mr. R. Turner complained of a very singular affection in the upper and lower extremities; the arms were several times in the course of the day seized with a numbness and prickling feeling, accompanied with a sense of great weight, like what is commonly called the part being *asleep*; and this symptom continued daily, more or less frequently, for six weeks, but, upon raising the arms in an upright position, it immediately subsided. The same feeling almost as constantly attacked the legs, but occasionally with, and sometimes without, the corresponding affections of the arms; the



legs were some minutes longer affected, by reason of his not being able, as he himself observed, to place them in the same position as the arms."—pp. 29—31.

"Mr. and Mrs. R. T. and Mr. G. for many weeks afterwards, in attempting to reach an object by extending either arm, found the fore-arm suddenly contract towards the chest, causing them frequently to miss their aim. This may be considered as a very peculiar and uncommon symptom.

"Mr. T. senior, for some time afterwards, had daily attacks of a burning sensation in one or both feet.

"It is curious to remark, that none of the patients complained, or had the slightest sensation, of the itchings of the skin,—a symptom particularly observed by Dr. Orfila in his general system of Toxicology, and also by Dr. Roget in his case of recovery from the effects of arsenic. Mrs. R. T. did not even complain of such a sensation, although she experienced an entire change of the cuticle."—p. 119.

Mr. Gadsden went to Cheltenham for some time, and returned apparently greatly improved in his general health, and the fits having left him about three weeks, he resumed his situation in Mr. Turner's office; but he relapsed, and, three months subsequent to the commencement of the attack, they again returned, at least three or four times in 48 hours. For some minutes, his sensations and distress of countenance generally indicated their approach, and his health and strength suffered materially. He was again recommended to change the air, from which he derived considerable benefit; but although a period of two years has elapsed since the first attack, he is still subject to frequent and severe recurrences of this frightful disease.

Such are all the material facts in these singular cases, as detailed by Mr. Marshall, with some omissions and transpositions. There can be no doubt, that the symptoms were owing to arsenic having been mixed with the yeast dumplings, as it was present in them in so palpable a form, and in such quantity, that white opaque particles were perceived pretty thickly distributed throughout the mass, which was conjectured to be arsenic; and next morning Mr. Marshall obtained from an earthen pan in which the yeast dumplings had been kneaded,

more than half a tea-spoonful of white arsenic, whose identity was ascertained by Mr. Hume of Long-Acre.

After these observations, we would not allude to his experiments on the decoction of onions; but that it gives us an opportunity of mentioning the curious facts that gave rise to them, of which we regret that we have not any accurate report, and of pressing upon our readers the necessity of always instituting comparative experiments in such an inquiry. In consequence of a trial for a suspected murder by poison, at Launceston assizes, in Lent 1817, it was discovered, that a decoction of onions gave a green colour with ammoniaco-sulphate of copper, and a yellow colour with ammoniaco-nitrate of silver, which had been relied upon by the prosecutor as evidence of the presence of arsenic in the contents of the stomach, and, as he was not prepared to redargue the facts, the pannel was of course acquitted. Mr Marshall, however, comes forward to remove all the difficulties suggested by this discovery.

"It appears, on a cursory view, that these tests, of which they employed only *two*, underwent some deteriorations, from their detail of experiments upon a decoction of onions producing the yellow and green *precipitates*. Indeed, the learned judge emphatically observed in his charge, that the onion *liquor* was always thrown away, and the vegetable itself only used. In consequence of the sophistical reasonings produced in the course of the medical evidence, this publication has been retarded until every satisfactory information could be derived from experiment to show the fallacy of the inductions.

"This chemical investigation was instituted principally with a view to substantiate scientific facts, and to behold the validity and accuracy of the ammoniaco-nitrate of silver particularly, as well as the ammoniaco-sulphate of copper, as re-agents; for until this part of the evidence be refuted, the general confidence of the faculty in them may probably be lessened. However, let any one thus biassed by such erroneous conclusions, or still entertaining a doubt, go through the same ordinal investigation about to be submitted for consideration, and he must immediately derive perfect satisfaction, by the palpable variation arising from the experiments.

"In short, these tests for the detection of arsenic, are of too

much importance to the professional world to be hastily abandoned, more especially as hitherto the science of chemistry is principally limited to them and their various modifications, until superior criteria are discovered. They must still remain the foremost in efficacy as already stationed and fully admitted in the scale of chemical affinities for detecting the presence of this poison when in a state of *solution*." pp. 146-7.

Mr. Marshall found that decoction of onions did not produce any precipitate with the re-agents employed, whereas his solution of arsenic did, in a very palpable degree. This is, no doubt, correctly stated; but two other facts are necessary to be known; that a very dilute solution of arsenic produces no precipitate with these tests, and that a decoction of onions, or other mucilaginous vegetable, prevents the production of a precipitate, when it would otherwise have taken place.

Mr. Marshall's experiments on the decoction of onions are in themselves correct; but he should have repeated them on a decoction of onions, to which a small proportion of solution of arsenic had been added, before he ventured to defend the tests of ammoniaco-nitrate of silver, and of ammoniaco-sulphate of copper, as being in every case infallible.

We are afraid our readers are tired of this long discussion; but we hold it to be of great importance, on account of the practice of our courts in receiving the evidence of all medical men as competent, and as nearly equal in point of conclusiveness; and of the presumption of our less informed and less cautious brethren, in giving evidence in cases of extreme difficulty, on which they have not bestowed the due degree of consideration, and which their previous knowledge has not even qualified them to investigate.

## BIOGRAPHY.

*Memoir of ABRAHAM GOTTLÖB WERNER, late Professor of Mineralogy of Freiberg.*

[From the Philosophical Magazine and Journal, for September, 1817.]

ABRAHAM GOTTLÖB WERNER was born on the 16th of September, 1750. His father, who was inspector of an iron-work at Wehrau, on the Queiss, in Upper Lusatia, intended him from his early youth for a similar vocation. He first went to school at Bunzlau, where he received however but very scanty instruction. In order fully to qualify himself for his intended profession, he went first for some years to the Mineralogical Academy at Freiberg, and then to the University of Leipsig, where he applied himself to the study of natural history more than to that of jurisprudence; and in respect to the former used to boast in later years of his intimacy with two distinguished naturalists of Leipsig, Mr. John Charles Gehler, and his brother John Samuel Traugot Gehler. Even while at the University he employed himself on the doctrine of the external characteristics of fossils, in which a singular quickness of perception was of great use to him; and published there, in the year 1774, the well known work (on the external characteristics of fossils) which is still considered as the basis of his whole oryktognosis, but of which he could never be induced to print a new and enlarged edition, because he feared disputes, and had not in fact concluded his researches. Soon after he was invited to Freiberg, to have the care of the cabinet of natural history there, and to read lectures upon it. Here his mind, which was early exercised in observation and classification, found the most welcome materials. Here, daily extending the bounds of his science, and supporting its foundation by the surest external distinctive marks, he formed that system which, afterwards embracing also the geognosis which was peculiarly his own, and forming an intimate connexion with all branches of the art of mining, gradually conquered all



opposition, and raised its inventor to the rank of the creator of a new mineralogy, which might be supported and extended, but not rendered useless by the crystallographic theory of Haüy, and the chemical theory of Vauquelin and others. His peculiar talent for observation was animated by the most lively fancy, assisted by the most extensive reading in every branch of knowledge connected with his own, and excited by daily intercourse with ingenious travellers and foreigners, who chiefly visited Frieberg on Werner's account. (We may instance only the Englishman Hawkins.) The classification in genera and species, and for the most part ingenious appellations of minerals down to the newest *egron*, is peculiarly his. "Werner," says Leonhard, in his eloquent lecture on the state of mineralogy, "was for the doctrine of the recognition of simple fossils, embracing with uncommon ingenuity all the experience of his age, what Winckelmann had been to the arts. What, before him, were all the endeavours of Wallerius and Linnæus!" How soon was he obliged to give up Cronstedt, who is no where satisfactory! Only too scrupulous, conscientiousness prevented him from publishing the *oryktognostical* tables, which have been finished, and quite ready for the press these four years. The attempt of the ingenious Berzelius, of Stockholm, at classification, by discovering the laws of combination of the elements, did not indeed shake his belief in the method of recognition by means of the external characteristics; yet he at last thought that a mutual conciliation was possible, and reserved the first analysis of the latest writings of Berzelius, for the next winter. Block's work was known to him. He approved of his ingenious scholar's (G.H. Schubert's) essays (*Ausgleichungsversuche*.) In the geognosis, first systematically deduced by him from the rough mass, crystalline structure, and the chemical relations of the contents, may be called in, together with the ties of external affinity; but the method created by Werner is the only satisfactory one, however much may yet be wanting to it, to become a complete system of the earth. His predecessor Charpentier's doubts respecting Werner's theory have never been able to shake it. His idea of formations, one of the most fruitful of consequences, and the most ingenious, in Werner's geognosis, has been ad-

mirably developed by his scholar Steffens in Breslau; and his formation of the flätz mountains of Thuringen, well supported by the excellent Von Freiesleben, in the theory of the copper-slate mountain (*Kupferschiefergebirge*). Werner sustained an obstinate, but for that reason the more honourable contest with the volcanists. Now, no well-informed person will consider the basalt and other flätz mountains as of volcanic origin. Werner's theory of the older and newer formation of mountains, by the waters, stands immoveable; and a satisfactory link between them is afforded in the mountains of the interval of transition. Even the new chemical discoveries of the *kalimetals* may be made to accord with it. Another science, Mining, on which Werner used also to lecture, was rendered extremely clear to the attentive scholar, by his luminous explanation and by the reduction of the most complicated machinery to the most simple propositions, at the same time drawing all the figures on his table. Indefatigable application, insatiable thirst of knowledge, enriched his retentive memory with every thing that history and philology, in the most extensive sense, can offer to the attentive inquirer. No science was foreign to him. All served as a basis to his studies, which were constantly directed to natural philosophy, and the knowledge of the earth and its inhabitants. He always advanced before his age, and often *knew* what others only *presumed*. After 1779 and 1780, when he first lectured on oryktognosis and geognosis, at Freiberg, he was heard with gratitude by scholars from all parts of Europe. Never contented with what was discovered, always seeking something new, he rather formed scholars who wrote than wrote himself. But many MSS. almost wholly ready for the press are included in his fine library, collections of coins and MSS. bequeathed on the day of his death to the Mineralogical Academy, for 5000 crowns. In his lectures he had only heads of the subject before him. In lecturing he used to abandon himself, as he was accustomed to say, to the inspiration of his mineralogical muse; and when his spirit hovered over the waters and the strata, he often became animated with lofty enthusiasm. But he caused his lectures to be written out by approved scholars; and by revising himself what they had thus written after him, made it, properly speaking, a MS. A great

many parts of his lectures have been made public by others, among which may be reckoned what Andic, at Brunn in Moravia, has published in the valuable journal *Hesperus*. But nothing bears the confirmation of the seal of the master. What is particularly desirable is the publication of his manuscript on *Mineralogical Geography* (which he only once drew up for a particular lecture), and upon the *Literature of Mineralogy*, in which he solved the difficulties of the ancient classic mineralogy, and gave incomparable illustrations of Pliny's *Natural History*. He was like a father to all his scholars, to whom he was a model not only as a man of science, but as a moral character. Having filled, from the year 1792, a high situation in the Council of the Mines, he had a great share in the direction both of the *Mineralogical Academy* and of the administration in general. Two things must be mentioned here with particular honour—the works begun in 1786, to furnish a great part of the deeper mines with water, in order to get water for driving the wheels. This astonishing aqueduct, particularly the artificial canal of Doerrenthal, with its subterraneous bricked channels, already extending above a league, are in the main due to him, though Scheuchler made the plan, and Lampe the calculations. By the continued support of the ever active king of Saxony, this great work still proceeds in the most prosperous manner. The Amalgamation works, twice built by the excellent Charpentier, chief of the Council of the Mines, (the first building was maliciously burnt down,) and for ever secured by most ingenious fire-engines from similar accidents, are indeed unique:—a miracle to all who behold them, and a jewel in the crown of the Saxon art of mining, and of the unostentatious energy with which the sovereign of Saxony caused the most expensive undertakings to be executed in silence. Less known and visited by foreigners, though on it depends the continuation of the mining in Saxony, is this undertaking of canals and aqueducts, which has already cost above half a million of crowns, and on which more than a thousand men are employed. The mineralogical survey and description of all Saxony, divided into districts, which has been prosecuted for these twenty years, under scholars of Werner, and includes the forest of Thuringen, and even a part

of the Harz, uniting too with the mountains on the frontiers of Bohemia and Silesia, will one day give our country a mineralogical map, which for exactness and extent surpasses what any other country can produce. This too was Werner's work, and was constantly directed by him in the most attentive manner. In his visits to Prague and Vienna, he found means to interest the Austrian government in these mineralogical surveys; and it is to be hoped that the enlightened Bavarian government, as well as the direction of the mines in the Prussian monarchy under Werner's grateful scholars in Berlin and Silesia, will readily contribute to support and complete the great work which Werner so happily set on foot. In England and Scotland excellent mineralogical maps of single counties have lately been published according to Werner's ideas. His cabinet of minerals, unrivalled in completeness and scientific arrangement, and consisting of above 100,000 specimens, has become, in consideration of a life annuity, the amount of which devolves to the Institution itself, the property of the Frieberg Mineralogical Academy. Werner's favourite pupil Koehler is appointed inspector of it. Werner had received from England an offer of 50,000 crowns for it. He sold it to his country for 40,000, of which he reserved the interest of 33,000 as an annuity; but made the condition, that after his own death, and that of his only sister, who is without children, the interest should continue to be annually paid to the Mineralogical Academy; so that this, his only daughter, as it may be called, obtains an additional annual income of 1600 crowns.

Werner's literary studies, like his mind, embraced every branch of science. Every thing excited his thirst of knowledge; and thus it often happened that he dedicated all his attention to researches which seemed to lie entirely out of his sphere. His inquiries into the direction of the mountains of the first and second formation, led him to the seat and the migrations of the aboriginal tribes and their branches. To this were soon joined inquiries into the original languages and radical syllables, which he prosecuted with the greatest acuteness, and reduced into tables. Soon arose an universal glossary of all the radical syllables and characteristic sounds, in all the



languages with which he was acquainted; which he studied with ardour, and to complete his knowledge of which he purchased the most expensive works; thus he gave sixty crowns for Hickes' Thesaurus, and but lately eighty crowns for Walton's great Polyglot. His antiquarian researches into the mineralogy of the ancients made him a passionate friend of archæology, and most of the works on that subject were purchased by him. One branch of archæology, the numismatology of the ancients, had become so favourite a pursuit with him during the last eight years of his life, that he purchased entire collections of medals, and in a short time was in possession of above 6000 ancient Greek and Roman coins: this enabled him to make interesting researches into the different mixtures of the metals and on the arts of adulteration; and in order to make all more clear, he arranged entire series of false coins. An unedited silver coin of his collection, which he gave to the great connoisseur Catauro, in Milan, is still the subject of a numismatic controversy between the Vienna and Italian connoisseurs. The examination, which was to be printed, was intended to be dedicated to Werner. The practice which he had had in studying the direction of the mountains and the surface of the earth, made him an excellent judge of ground, and inspired him with a great fondness for military tactics. He studied the art of war with great diligence, read the accounts given by masters in this branch, and acquired a fine collection of military books. Officers of the engineers and general staff were surprised to hear him speak of the mistakes committed by the allies from want of due knowledge of the ground, in their attack upon Dresden in August 1813, where he happened to be present. His name was mentioned at the head quarters of the allied sovereigns at Frankfort, and he was invited to repair thither; but his inflexible attachment to his king made him decline the invitation. Medicine also attracted his attention, at first as lying in the circle of the sciences connected with natural history, but afterwards in the latter years of his life, that he might be enabled to judge of the bodily sufferings of himself and others; so that medical books were his favourite reading, and conversation on medical subjects what he preferred to every other. Ever ready to afford assistance,

he was happy, when he visited a sick friend, to be able to give medical advice, and also to judge of his own situation, which he often thought precarious. The danger of such an inclination, which can never lead to any thing further than empiricism, is evident. His best friends, among whom we may reckon the veteran of the healing art, the venerable Dr. Kapp, at Dresden, sometimes reproved him for this, but it remained his favourite hobby-horse. He had made a very witty table of diseases according to the stages of human life, from infancy to old age: he was a sworn enemy to vinegar and all kinds of milk diet, but a determined beef-eater. In other respects he lived very temperately, drank but little wine, and was especially and anxiously careful about warm clothing and warm rooms. He first visited Carlsbad, when a boy of only fourteen years of age, and had since been there forty-one times. Here, even in the latest part of the autumn, he always acquired new strength. Had not imperious circumstances hindered him this time from visiting sooner the salutary fountain, which had become absolutely necessary to him, he would perhaps have still lived. He was fond of travelling, and spoke with emotion and pleasure of his visit to Paris in 1802, where he was received with the greatest respect. Though not indifferent to external distinctions, to the diplomas of foreign academies and learned societies, he never sought or asked for them, and in conversation never attached any value to them. However, he was justly proud of being a member of the Institute of France, and of the Wernerian Society in England. Even on his death-bed, he learnt with joy from his former pupil and faithful friend, the Professor of Natural History at Edinburgh (Jamieson,) that not only several mineralogical societies flourished in Great Britain, but that professorships of mineralogy on Werner's principles were founded at Oxford, Cambridge, London, Glasgow, Cork, Dublin, and Belfast. At his suggestion a union of friends of natural philosophy and mineralogy was formed last winter in Dresden, where Werner himself presided. He was in the best sense of the expression a citizen of the world. Every newspaper that he read, excited in him a pious wish for the happiness of mankind, for truth and justice. In the last days of his life, his eye was most

frequently directed to the Brasils, where the excellent Oranjo was his friend, and many Germans now employed there his scholars. In his thoughts he followed every traveller, and put questions to him, in his own mind, such as Michaelis once wrote for Niebuhr and Forskael. His house was the constant rendezvous of curious travellers, from all countries and of all ranks; and he showed to them all, with uncommon patience and attention, his museum, and especially his collection of precious stones, which excites surprise by the value and variety of the specimens. He did not, however, like writing letters, because he preferred personal intercourse to every thing, and dreaded a loss of time. This disinterested participation, in whatever promoted in any country the interest of knowledge and humanity, did not hinder him from being the most faithful son of his own country, the most loyal reverer of his king. He refused every invitation from abroad, (and he received at an early period several very brilliant and enticing ones,) and was for many years contented with a very moderate salary, supporting himself by private lectures. He made presents to all the academies and public schools of Saxony, and endeavoured by this means every where to excite a predilection for natural philosophy. Those who were most intimately connected with him, enjoyed his tenderest interest and care.—“In his house,” says Boettiger, in his farewell address on the eminence of Gorbitz, “company daily assembled for his advice; and the same hand with which he felt the pulse of nature, raised and supported every unfortunate. His simple manners, his cordial cheerfulness, and his social playfulness, made him the favourite of his fellow-citizens. When Werner entered, every countenance brightened; the women, too, loved the company of a man who, without insipid compliments, always had something delicate and entertaining to say to them. In his earlier years his feeling heart would doubtless have made him highly susceptible of enjoying the sweets of domestic life: but he did not find what he sought. In later years he renounced the idea of them, out of love to science, and was fully indemnified by the cordial attachment of his pupils and friends. Penetrated with that true devotion which worships God in spirit and in truth, he often preached to his pupils the purest

morality, which he confirmed by his own example; and even in his lectures often rose with genuine enthusiasm from the miracles of nature to their Divine Author.—Such was the man of whom his contemporaries and his country will be always proud; a man equally distinguished by his rare learning, and by his goodness of heart and unspotted character. How just is the grief caused by such a loss! His fairest monument is the gratitude of his pupils, who are spread over all the countries of the world. But his doctrines and his life will not fail of public acknowledgment and praise. This tribute will be given him from France, England, and Italy. Neither must the tongue of his pupils in Germany be mute. May Von Leonhard dedicate to him his second lecture in the Academy at Munich! May Steffens, Ullmann, Hausmann, Mohs, Moll, Linke, and Weiss, and above all the feeling Schubert, speak of him! May Gilbert, who defended him against the violent Chenevix, erect a memorial to him in his *Annals*!—Nor can we doubt but some monument of marble or bronze will be raised to his memory, to which British gratitude and generosity will gladly subscribe, and Frieberg afford a suitable situation to be inclosed for the purpose. For the present we hope that Böhme, or Buchhorn, will engrave the fine portrait of him, by G. Von Kugelchen, in Dresden, which was intended for his museum, for the satisfaction of his numerous scholars and friends. His most glorious monument, however, will always be the Mineralogical Academy, preserved in uninterrupted activity by his worthy scholars; that academy which he himself sometimes called his beloved daughter, and richly endowed; those who go thither on a pilgrimage, those who there receive instruction, will pay continued homage to the manes of WERNER.



## ORIGINAL PAPER.

FOR THE ECLECTIC REPERTORY.

*Case of diseased Ovarium.*

BY EZRA MICHENER.

FROM the acknowledged importance of morbid anatomy as a branch of medical science, it is presumed that the following case will not prove uninteresting to you.

About four weeks since I was requested, by a friend of hers, to visit Rosanna Albert, at her residence in Small street. From the account then obtained, and afterward confirmed by herself, it appears, that somewhat more than seven years ago, a small tumour was perceived in the left hypogastrium, and had been gradually increasing ever since. Little inconvenience was experienced from it, until the compression and displacement of the abdominal viscera began to impede their functions. She never bore children, but has menstruated regularly up to the present time. During this long period several respectable physicians had been consulted in vain, and the whole legion of empiric arcana exhausted to no purpose. Some time previous to my seeing her, the abdomen began to increase more rapidly, the breathing grew more difficult, and her lower extremities became œdematous. All these symptoms increased in violence, as the tumour grew larger.

On entering her apartment, I found her resting in a half-recumbent position, breathing hurried and difficult, voice scarcely intelligible, countenance extremely anxious, feet and legs cold and œdematous, the abdomen enlarged to the size of a woman at the full period of utero-gestation, and the pulse, though feeble, indicating a degree of turbulent excitement compatible with the deranged state of the system. On examining the state of the abdomen, a hard irregular tumour was easily discovered occupying the left and middle portions of the great cavity, and

extending from the pubes and ileum quite up to the cartilago ensiformis. No fluctuation was perceptible in the tumour, but the right side of the cavity indicated an effusion.

The previous history and present symptoms all induced me to believe it was an ovarian disease, but whether scirrhus or hydropic I could not so satisfactorily determine. The want of fluctuation in the tumour, and its slow regular progress, bespoke its scirrhus nature; while an exemption from those lancinating pains peculiar to scirrhus, its monstrous size, and the general effusion, indicated a contrary opinion. With a view, however, of removing the watery effusion and thereby rendering the case less complicated, I resolved upon the use of diuretics. But when the medicine was furnished, she positively refused to take it, on the supposition that her disease was incurable. On the following day Dr. James saw her, and by his opinion confirmed the one just offered, as to the disease, and the means likely to relieve it.

Some days after she again consented to try the effect of medicine. She now came under the care of the Southern Dispensary, as a patient of Dr. Haydock, who had recourse, immediately, to diuretics. After a day or two she again refused all medicine and he discontinued his attendance.

About this time the skin, covering the legs, no longer able to resist the distending force of the gravitating fluid, which her position determined to them, (for she now reclined herself in an easy-chair with her feet depending,) opened a thousand pores, through which the percolating fluid continued to pass off, and trickle down to the floor beneath. Although the swelling of the limbs subsided a little after this drain was established, yet her strength rapidly declined, her breathing became more difficult, and an extensive sphacelus having reached from the left foot to the knee, she was at length released from the trammels of a life which had long ceased to afford pleasure to its miserable possessor.

Soon after her decease, and in compliance with her special request, I received an invitation to examine the body, which I proceeded to do twelve hours after death in company with Dr. Haydock and J. B. Price. The dropsical swelling had greatly subsided, and no fluctuation could be perceived in the right side. An incision was carried from the sternum to the

umbilicus, and thence to the spinous processes of the ilia, exposing the great cavity. An enormous tumour now presented itself to our view, occupying the left and central, while the displaced intestines held the right portion of the cavity. Its general appearance might have been aptly compared to that of the gravid uterus, had it not been for some irregularities, yet to be described. Very little fluid was found in the great cavity. The fallopian tubes were found to arise from the lower and posterior part of the tumour, where there was a small prominence resembling the back part of the uterus. The right tube and ovary were in a natural condition, the left tube was enlarged, and had its fimbria closed into a round flesh-like mass, and a scirrhus tumour, supposed to be the corresponding ovary, about the size of a walnut, was attached to the great tumour near the extremity of the tubes. The omentum had formed adhesions with the upper part of the tumour, the vessels of which were greatly enlarged. The pancreas was found much enlarged and in a scirrhus state.

The tumour was next removed by dividing the omentum just mentioned, and the broad ligaments, separating it from the bladder and rectum, and finally cutting through the vagina below the os uteri. We now found the uterus and tumour so intimately united as to render it impossible to distinguish or separate them. It weighed and measured as follows.

Weight after the water (about lbj.) had been evacuated,	- - - - -	8 lb. 10 oz.
Perpendicular diameter,	- - - - -	12 inches.
Antero-posterior do. near the upper end,	-	9
	lower end, - -	5½
Mean lateral diameter,	- - - - -	5½
Antero-posterior vertical circumference,	- -	33
Horizontal circumference near the upper end,	-	22½
	lower end, -	16½

A firm dense coat, about two lines in thickness, resembling the substance of the uterus, and continuous with it, covered the whole tumour. This covering had numerous circular openings in it, through which a gelatinous fluid was protruded, distending the peritoneal coat into sacs of various sizes. This fluid was easily returned on pressure, yielding the impression,

to the touch, of a reduced exomphalos. An incision was next made through the posterior part of the uterus, and its cavity exposed. The os and cervix uteri, as well as the lower part of the body of the uterus, was in a healthy state, but three scirrhus tumours occupied its fundus and in some degree enlarged that part of its cavity. The state of the cervix explains the phenomena of menstruation already noticed. The body of the tumour, superior and anterior to that of the uterus, was now laid open and its contents examined. It was composed of a great number of scirrhus tumours of various sizes, from that of a pea to two or three inches diameter. Some were contained in the substance of the uterus and sac, others adhered firmly to them; but the greater number were connected to the sac, and to each other, by a peculiar delicate cellular membrane which was found floating in a gelatinous fluid, and on which the blood-vessels were spread in the most beautiful manner.

The whole of the appearances in dissection were such as to leave no doubt in our minds of the disease being uterine. It probably commenced on the anterior or left side of the uterus within its substance, dilating the external portion, as the disease advanced, without affecting the cavity, until it attained the astonishing size just mentioned.

It is a wish to give you a counterpart for Dr. M'Dowell's Paper\* that induces me to offer this account for your disposal.

While his hand holds forth the successful blade as an ensign for the bold and dexterous surgeon, may I humbly point to the dangers which lurk under the obscure and delusive indications of this species of disease.

It is much to be regretted that cases so interesting to the community as those of Dr. M'Dowell's, and as novel as interesting, should come before the public in such a manner as to frustrate the intention of becoming useful.

Far be it from me to arraign the probity of Dr. M'Dowell. If the cases he relates are, as I sincerely hope them to be, correctly stated, no remarks of mine can detract from his merit.

From the account of his first patient we learn that she rode sixty miles on horseback, (to Danville.) In performing the ope-

\* Eclectic Repertory, Vol. VII. page. 242.



ration he says, "I made an incision about three inches from the musculus rectus abdominis on the left side, continuing the same nine inches in length, parallel with the fibres of the above named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribe to the resting of the tumour on the horn of the saddle, during her journey." How, I ask, could the horn of the saddle contuse the left side three inches from the rectus muscle? Again, "the tumour then appeared full in view, but was so large that we could not take it away entire. We put, &c.—. We took out fifteen pounds of a dirty gelatinous looking substance. After which we cut through the fallopian tube and extracted the sac which weighed seven pounds and a half." He adds, "as soon as the external opening was made the intestines rushed out upon the table. We then turned her upon her left side, so as to permit the blood to escape." Further, "in five days I visited her, and much to my astonishment, found her engaged in making up her bed."

By the second case we learn, that the adhesions were so strong that he could not extirpate the tumour, "but by way of experiment, I plunged the scalpel into the diseased part." Much blood, and a gelatinous fluid was discharged. The wound was closed and the patient recovered.

In the history of the third case we find nothing very remarkable, except where he tells us, "I found the ovarium much enlarged, and as it could be easily moved from side to side, I advised the extraction of it." But in the next sentence says, "as it adhered to the left side, I changed my place of opening to the linea alba." He afterward turned the tumour out without any mention of adhesions.

The utter impossibility, of our ever being able to ascertain with certainty the real nature of those internal diseases; the delusive nature of all their indications, and the necessary danger of an operation under the most favourable circumstances, will be likely to prove an insurmountable barrier to the use of the knife in their removal; as few persons will be likely to venture their reputation on such uncertain data.

EZRA MICHENER.

*Philadelphia Dispensary, 7th Mo. 27, 1817.*

*Extract from a Memoir, entitled Chemical and Physiological Inquiries on Ipecacuanha, read before the Academy of Sciences of Paris, February 24, 1817. By Messieurs PELLETIER and MAJENDIE.*

[Translated for the Eclectic Repertory.]

THE authors of this memoir, fully convinced that we have not acquired that degree of information respecting this valuable root which the present state of science would permit, have subjected it to new experiments, and have added to our knowledge many facts striking and highly interesting to chemistry and medicine.

After giving a concise history of ipecacuanha and pointing out, *in a summary manner*, the principal results obtained by the later chemists who have engaged in the inquiry, Messrs. Pelletier and Majendie proceed to explain the course they pursued in the analysis of the brown ipecacuanha, procured from the *Psycotria emetica*. They first examined the cortical part, which they treated with repeated portions of sulphuric ether, and had recourse even to a slight degree of heat, with the view of obtaining whatever was soluble in this menstruum. After the ether, they employed highly rectified alcohol, which was renewed until it excited no further action, even when aided by a boiling heat. The powdered ipecacuanha, treated in this way and no longer acted on by these menstrua, was dried and then subjected to the successive action of cold and boiling water. They considered the residuum from these experiments as an inert and ligneous substance. Each of the products of these several operations was subjected to a particular examination.

The ethereal tinctures were of a fine golden yellow; being distilled, the first products were inodorous, the last possessed sensibly the odour of ipecacuanha. The residuum after evaporation yielded a fatty matter, of a brownish yellow colour, when in mass, but dissolved in alcohol or ether it imparted a golden yellow to these liquors. It is nearly tasteless, but the odour is very strong and resembles that of the essential oil of horse-radish. It is rendered insupportable when raised by heat. Attenuated, it resembles that of ipecacuanha; in this

matter, therefore, resides the odour of this root. The fatty matter is heavier than alcohol and possesses the specific gravity of water. It melts immediately on being heated. The action of heat disengages an evanescent oil of a very pungent odour; but the larger portion of this matter is decomposed before it is volatilized, and affords the same products as highly hydrogenated vegetable substances when decomposed by heat. The oil no longer possesses the properties and odour above described, but is intensely empyreumatic. If water is distilled on this fatty matter, it acquires a strong odour of ipecacuanha, and an evanescent appearance is formed on the surface by this volatile oil.

Hence we conclude, that ipecacuanha contains two kinds of oil; one volatile, highly evanescent, constituting the odorous principle; the other fixed, fatty, possessing little or no odour, insoluble in water, but soluble in alcohol and in ether. The alcoholic tinctures deposited, by cooling, slight flocculi, which, collected on the filter, were ascertained to be wax. These tinctures had a yellow brown colour. Evaporated in covered vessels on a water bath, they afforded a residuum consistent and of a saffron red colour. This residuum was taken up by cold water, and nearly all dissolved; a small portion of wax was separated by this means. This watery solution was likewise evaporated, the product was very deliquescent, slightly acid, of a bitter and slightly acrid taste, and without odour. The carbonate of barytes was added to separate the acid; the solution was deprived of acidity, but the extremely minute proportion prevented its being separated from the carbonate of barytes, employed in the experiment. The authors are of opinion, that it is the gallic acid, for the acid liquor turns the solution of the acetite of iron green. This solution, after being treated with the carbonate of barytes, was precipitated by a suitable proportion of the acetite of lead, and almost completely deprived of colour. The sub-acetite of lead renders it completely colourless. The greyish precipitate which is thus obtained, beingedulcorated, and greatly diluted in distilled water, was exposed to a current of sulphurated hydrogen, to separate the lead; after this series of operations, the substance remaining in solution was discovered to be highly emetic, and

as exclusively possessing the property belonging to *ipécacuanha*. It was therefore very carefully experimented on, and occupies a considerable portion of the memoir; these experiments we shall extract entire.

*Of the Emetic Substance.*

From the experiments we have related, we are made acquainted with some of the properties of the emetic substance, as its solubility in water; its deliquescence; the action of alcohol; its insolubility in ether; but with the view of affording more complete information, we shall present a distinct account of the action, and of the several chemical re-agents to which it was subjected.

The emetic substance, when dried, assumes the form of transparent scales, of a brownish red colour; it has scarcely any odour; it has a bitter and somewhat acrid taste, but no wise nauseous. The emetic substance undergoes no change at a temperature below that of boiling water, and is not fusible at a higher degree; it swells, grows black, is decomposed, imparts to water carbonic acid; small portion of oil; of acetic acid; the residuum is a light spongy coal; there are no traces of ammonia, which demonstrates that azote does not enter into its composition.

Exposed to the atmosphere, it undergoes no change; if the air is humid, it becomes moist by absorbing the *hygrometre* water. Water dissolves it in every proportion without decomposing it; it is not crystallizable.

It is not affected by the diluted sulphuric acid; it is decomposed and changed by the concentrated acid.

It is dissolved in the nitric acid, whether hot or cold, and acquires a fine red colour; by continuing the action of the acid, the colour is converted into a yellow; nitrous fumes are disengaged, and crystals of oxalic acid are formed; no yellow bitter substance is produced.

The muriatic and phosphoric acids dissolve without effecting any decomposition of it; on saturating the acids the emetic matter is obtained.

The acetic acid is one of the best solvents of the emetic matter. The gallic acid, on the contrary, precipitates it from



its solution in water, alcohol forming with it the most intimate union. The abundant and flocculent precipitate which is formed, is of a dirty white; is little soluble; yet a small quantity remains in the liquor. The emetic matter, by this combination, is deprived of its emetic properties, as we shall have occasion to remark, when we come to explain the action of this emetic matter on the animal economy. The aqueous and alcoholic tincture of nut galls forms likewise, with this matter, a very abundant precipitate. The tartaric and oxalic acids do not act on the emetic matter; the diluted alkaline solutions produce no action on the emetic matter; but it is destroyed by the concentrated alkalies.

The alkalies dissolve the precipitate formed by the nut galls and gallic acid with the emetic substance. A solution of iodine in alcohol, poured on the alcoholic tincture of the emetic substance, produces a red precipitate, which appears to be a combination of iodine and the emetic substance. The small quantity which we could obtain of this precipitate, did not admit of a thorough examination.

Of the salts which we mixed with the emetic substance, none exerted a stronger action than the acetate of lead; a very abundant precipitate is formed, especially when the subacetate of lead is employed. When the experiment is made with the acetate of lead of commerce, which contains more acid, the precipitate is not so abundant, and the supernatant liquor remains slightly coloured. Hence it appears, that the acetic acid prevents the precipitation.

The protonitrate of mercury at first exerts no action on the emetic substance, but after some time a slight precipitate is formed.

The deuto-chlorine of mercury occasions a rather greater precipitate. The precipitate formed by the muriate of tin is likewise in small quantity. The ferruginous salts produce no effect on the emetic substance, when it is deprived of the gallic acid.

The antimoniated tartrate of potash does not act on the emetic substance; a very interesting fact, as these two articles are frequently administered together.

The decoction of cinchona produces a slight precipitate

from a solution of the emetic substance; but the precipitate is not to be compared in quantity with that produced by the infusion of nut galls.

Vegetables do not act on the emetic substance; the same is true of sugar, gum, gelatin, and other vegetable and animal substances, employed in these experiments. Others do not dissolve the emetic substances. In the course of the memoir we shall treat of its action on the animal economy.

On reviewing the properties of the emetic substance of ipecacuanha, we are induced to consider it as a substance sui generis. From the numerous experiments we have made to separate its several principles, the emetic properties, the effect produced by the gallic acid and nut galls, from the whole assemblage of these properties we are inclined to consider it as a specific substance, a constituent principle in vegetables; the more especially as we have found it in emetic plants, belonging to different families, in the *Callicoca ipecacuanha*, in the *viola emetica*, &c. and if our experiments may be relied upon, it is entitled to be ranked in the nomenclature, and designated by the name of emetine (*μυσ, vomo*) which will indicate the remarkable property with which it is endowed, and the plant in which it was first observed, the *psycotria emetica*.

It remains that we should speak of the products furnished when water was employed as the menstruum, for dissolving the portion of ipecacuanha no longer soluble in ether or alcohol. When subjected to maceration at the common temperature, the water became mucilaginous, and by evaporation afforded a greyish matter; which being washed in alcohol was deprived of its colouring principle, and was recognised as the emetic substance already described. The white residuum possessed all the properties of gum, and by treating it with the nitric acid, oxalic acid and mucous acid were obtained.

After cold water had ceased to act, boiling water was employed, which dissolved a considerable quantity of a substance, which the authors found to be starch. A small quantity of iodine being added to the liquor, a fine blue colour was immediately produced.

Here, Messrs. Pelletier and Majendie close their chemical enquiries on the *psycotria emetica*, and consider what remain-

ed insoluble in the various menstrua employed as merely ligneous. They notice as a singular fact the intimate combination of the woody matter and the fecula, traces of which they discovered on the eighteenth boiling.

The mean average of several analyses afforded the following proportions in the first species of ipecacuanha.

Fatty and oily matter	-	-	-	2
Emetic matter (Emetine)	-	-	-	16
Wax	-	-	-	6
Gum	-	-	-	10
Starch	-	-	-	42
Wood, ligneous matter	-	-	-	20
Loss	-	-	-	4
				<hr/>
				100

The analysis of the medittullium of the same root, conducted in the same way, gave,

Emetic matter, (Emetine)	-	-	1.15
Extractive and non emetic matter	-	-	2.45
Gum	-	-	5.
Starch	-	-	20.
Ligneous matter	-	-	66.60
Slight traces of fatty matter	-	-	
Loss	-	-	4.80
			<hr/>
			100.

The non emetic extractive matter indicated in the above analysis, bears a strong affinity to the extracts obtained from most ligneous substances, and is very difficultly separated from the emetic substance, impairing the properties of the latter; it differs from the emetic substance in not being precipitated by nut galls, or the gallic acid, while the latter forms, as we shall explain more fully, abundant precipitates with these reagents; the small quantity of emetic substance contained in the ligneous medittullium proves the propriety of apothecaries separating the medittullium, in preparing the powdered ipecacuanha.

The grey ipecacuanha, the root of the *callicoca ipecacuanha* separated from the medullium, and treated in the same way, afforded,

Fatty matter	-	-	-	-	-	-	2
Emetine	-	-	-	-	-	-	14
Gum	-	-	-	-	-	-	16
Starch	-	-	-	-	-	-	18
Ligneous matter	-	-	-	-	-	-	48
Wax, quantity not ascertained.							
Loss	-	-	-	-	-	-	2
							<hr/>
							100

To complete the plan proposed by Messrs. Pelletier and Majendie, they instituted a number of physiological experiments with the several products; as no very striking properties could be attributed to the gum, starch, wax and ligneous matter, they confined their inquiries to the fatty matter and the emetine, which we shall give in the language of the authors.

"The fatty matter imparts an odour and flavour similar, but much stronger than the ipecacuanha in substance. Hence, it might be inferred, that its action on the stomach would be analogous, but this conjecture is not confirmed by experience. Pretty large doses were given to several animals, but no sensible effects were produced; we likewise swallowed several grains in repeated doses, but were sensible only of a disagreeable nauseous smell and taste, which was momentary. M. Caventou, who kindly assisted in these experiments, took six grains at a dose and did not experience more perceptible effects.

"Very different results were obtained with the *Emetine*: half a grain given to a cat excited considerable and long continued vomitings followed by deep coma, from which the animal did not recover for some hours.

"This experiment was repeated on several other cats and several dogs, with nearly similar doses of the emetine; the results were similar, that is, there was always vomiting in the first place, then coma, after which the animal was restored to perfect health in a longer or shorter period."



The authors repeated these experiments on themselves and with similar results.

Since this period the emetine has been administered as an emetic to several patients; all experienced the effects usually obtained from ipecacuanha, without being disgusted with the disagreeable smell and taste of ipecacuanha; for the emetine is devoid of smell, and the taste is only slightly bitter.

Messrs. Pelletier and Majendie did not confine their inquiries to the foregoing experiments, they wished to ascertain whether the emetine administered in larger doses would induce any inconvenience.

For this purpose 12 grains of emetine were given to a small dog, about two years old; at the end of half an hour the vomiting came on, and continued for a long time. The animal became comatose, but instead of reviving as in the animals mentioned above, it died the following night about 15 hours after the emetine had been administered.

On examining the body the next day, it appeared that the animal had died of a violent inflammation of the substance of the lungs, and of the mucous membrane of the intestinal tube extending from the cardia to the anus.\*

The experiment repeated on several other animals, with only six grains of the emetine, afforded similar results. The same occurred in several dogs, in whom the emetine, dissolved in a small quantity of water, was injected into the jugular veins, within the pleura and anus, or introduced into the substance of the muscles; in all, the results were similar; first, long continued vomiting, consequent coma, and death within twenty-four or thirty hours after the experiment. On opening the body, inflammation of the lungs and mucous membrane of the alimentary canal.

These experiments show that the emetine cannot be administered in large doses with impunity; and that the practitioners who consider it as indifferent whether the ipecacuanha is taken in large or small doses, are under a mistake; for its action is not limited to the excitement of vomiting, as is generally supposed.

\* These appearances are similar to those observed from poisoning by emetics. See Majendie's Memoir on Emetics.

The authors likewise remark, that the action of the emetine on the lungs and the intestinal tube, justifies the practice of exhibiting ipecacuanha in small and reiterated doses in defluxions from the lungs, in chronic catarrhs, long continued diarrhoeas, &c. From this practice, in several persons affected with these disorders, they have established, that the emetine administered in regulated doses, was attended with more certain and constant effects than the ipecacuanha, and they give many cases in confirmation.

The experiments repeated with the emetine obtained from different kinds of ipecacuanha, produced the same effects, which demonstrates that this product is identically the same in all, and that it ought to be considered as a constituent of these plants.

From the results obtained by Messrs. Pelletier and Majendie they conclude; 1st. that there exists in common ipecacuanha, whose analysis has been given, a particular substance which they term emetine, to which these plants owe all their medicinal properties; 2d. that this substance is emetic, and exerts a peculiar action on the lungs and the mucous membrane of the intestinal tube, and proves likewise narcotic; 3d. that the emetine may be substituted for ipecacuanha in all cases when this article is employed, with this advantage; that in definite doses it has constantly the same effects, which is not strictly the case with the ipecacuanha of the shops, and that its being devoid of taste and smell gives it a decided preference when employed as a medicine.

## MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

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*Account of the fatal Accident which happened in the Leadhills Company's Mines, the 1st March, 1817.* By MR. JAMES BRAID, Surgeon, Leadhills.

[From the London Medical and Surgical Journal, for October, 1817.]

ON 1st March last, I was sent for, about seven o'clock A.M., to try if any thing could be done for a number of men, who were found in the Leadhills Company's mines, who appeared to be suffocated.

On the 30th December, 1816, a young man, who kept a fire-engine nearly 600 feet below the surface, was found dead, and the air where he was not to be at all agreeable:—the usual modes of resuscitation were tried; but without any good effects.

On the 24th of February, 1817, there were several men very severely affected from the bad state of the air, but by giving them gentle laxatives, and keeping them quiet, they got pretty well again in the course of a few days.

On the 1st of March, none of the men had got to bank when I arrived, except a few who had been down only a very short time, and returned upon finding the air so bad. By and by, a number of those who had been down for a short time, at 25 fathoms, were brought up, and most of them quite furious. Some were disposed to fight; others, supposing every one they saw disposed to lay hands on them, made efforts, under the most extreme terror, to escape; others, quite listless, appeared to take no notice of what was going on around them. Some were singing, and some praying. Many were as if intoxicated with ardent spirits: those who had seen them in that state assured me their actions were very much the same.

Many of them vomited, and others had the inclination, but could not do so. Some evacuated the contents of the rectum,

and others had the desire without effect. The pulse was different—in some remarkably quick and feeble; in others slow, feeble, and irregular. Most complained of insufferable head-ach, which was somewhat relieved after vomiting. To those who had a desire to vomit without effect, I gave an emetic of sulphate of zinc; and to those troubled with tenesmus, a laxative glyster: both were followed by an alteration of symptoms.

In the course of two or three hours from the time they were brought to bank, the pulse was greatly accelerated, and hard. I prescribed a brisk purgative, after the operation of which they found themselves greatly relieved; and, by enjoining a cooling regimen, most of them got pretty well, in the course of a few days, without any other medicines. Upon inquiring of the men how it affected them, they said they first felt a difficulty of breathing, and had frequent involuntary deep inspirations—then a violent pain and beating in the head, with ringing of the ears—the inferior extremities became weak, and very painful immediately above the knees, and they could with difficulty support the body—the heart palpitated violently—great anxiety, and in some followed by vomiting. They now became giddy, and lost all recollection, and were, as has been remarked, affected as if they had taken a large dose of ardent spirits.

There were four men, however, at 25 fathoms, who were irrecoverably lost through their own imprudence of going to work at irregular hours. Though six o'clock A. M. was the proper hour, two had gone before four, and other two a little after, in order that they might get out so much sooner. Such practices are not sanctioned by the masters. When they came to the bad air, they had thought to force their way through it, expecting it would be better below; but it had soon produced its deleterious effects upon them, so as to make them unable, either to go further, or to retrace their steps; and then, unable to support themselves, they had fallen, and remained amongst the bad air till assistance came too late. Animation must have been gone two or three hours before they were brought to bank, for they had been down not less than four hours. Had they not gone till the regular shift, when the air was found to be so bad, they would not have proceeded so far; and, if one



or two had fallen, the others would have found some means to have rescued them, before they had been irrecoverably gone. It is presumed, the accident happened from a quantity of smoke escaping from the chimney of the engine under ground into the way-gates, about the twenty-five fathoms, and so contaminating the air in the workings, from the quantity of sulphurous acid gas which the smoke contained, such as to render it unfit to support animal life, or rather, highly deleterious. The men described the air to be the same as where sulphur is burning slowly, and, consequently, sulphurous acid gas forming.

At the time the accident happened, the atmosphere was foggy, and there was a want of a proper current of air in the workings; and, in consequence of the stagnation, the air in that part of the way-gates, where the smoke was escaping, became so contaminated, by sulphurous acid gas, as to render it highly deleterious to animal life. A trap-door being opened, in order to save those who were still alive, about the twenty-five fathoms, (that is, those who went at the time for a regular shift, the four who had gone in before were dead when these men went to them,) and to enable others to give them assistance, with safety to themselves, the bad air immediately rushed down to the lower workings, and began to exert its deleterious effects upon those at eighty fathoms, who were effecting their escape by another shaft. All who were any length of time in this situation were violently affected in the manner already mentioned, and three (two of whom went down to save others) perished at the eighty fathoms, from the air all below the forty fathoms becoming so bad, as to render it imprudent, or rather impossible, for any person to go down to their assistance; and, by this time, they were unable to assist themselves. Those in this situation were drawn up by an engine, and the last who got on the rope, from the others, either, by this time, not being able to secure him properly, or not having time to do so, from him giving the signal too soon, fell from the rope, after he was within twenty fathoms of bank, and was thrown into the landing-box of the water-engine, which threw the water from the landing-box (which is situated at the fifty fathoms) to the bottom of the shaft, so that it had forty fathoms to fall. Water was also thrown from the top,

with buckets, before the engine-water was diverted by this poor fellow tumbling into the landing-box. The water, by falling down the shaft, caused a circulation of air, and likewise, by absorbing the sulphurous acid gas, improved the air so much, that one who had lain at the side of the shaft, in an insensible state, for more than an hour, was restored. Other two, who were only at a very little distance from him, but were by so much further from the shaft, and consequently where the air could not be so much improved by the waterfall, were brought up immediately after him; but, though the usual modes of resuscitation were tried, neither of them could be restored. One of these last had had a very florid countenance. I took away a considerable quantity of blood from the jugular vein.

Those of a plethoric habit were much sooner, and more violently affected, than those of a spare habit; and, from what I saw, I make no doubt but one of a spare habit might remain in some degree active, whilst one of a very plethoric habit would be irrecoverably lost. When it becomes necessary for men to go into such situations, would it not be proper to take away a quantity of blood from those of a plethoric habit? I shall certainly be disposed to try it, if ever the air shall again become bad.

The candles burnt, though faintly, where the men perished; which was generally considered as an extraordinary thing; and the only hypothesis which I can conceive proper to be advanced on the subject, is, that, in a mixture of sulphurous acid gas and atmospheric air, the acrid nature of the sulphurous acid gas prevents respiration, or rather produces peculiarly deleterious effects, which, continued a certain length of time, will destroy animal life; whilst it has no further effect on combustion, than merely mechanically preventing the more free supply of oxygen it would have from pure atmospheric air, and, consequently, causing it to burn more faintly.

*Proceedings of the Academy of Sciences of the Royal Institute of France.*

[From the Journal of Science and the Arts, No. V. and VII.]

M. Desfontaines read a report on a note of Mons. Virey, respecting the real nature of the *ergot* of rye, which he asserts to be a disease of the grain, and not a parasitic plant, as mentioned by Decandolle. Mons. Desfontaines, after giving the description of the *ergot*, enters into some elaborate researches respecting its growth, real nature, and external character, detailing, at the same time, the experiments made by Mons. Vauquelin, upon that substance. The reporter likewise details the opinion announced sometime ago, by Mons. Decandolle, that the *ergot* was a champignon, to which he had given the name of *sclerotium*, and that the seed of this parasitic plant was absorbed by the rye, and germinated afterwards. But facts, the reporter might have added, are not in support of this theory, and experience as well as experiments, prove the contrary to be the case. The report concludes with saying, "that although we do not reject altogether Mons. Decandolle's opinion, the experiments, and every other circumstance, must naturally induce us to adopt M. Virey's way of thinking on the subject." To the differences existing between the *ergot* and the *sclerotium*, mentioned by Mons. Desfontaines, M. P. Beauvois added, from his own observation, that there is another apparent character in the two substances, which alone would suffice to distinguish them from each other. This is the facility with which the grain of the *ergot* is detached from the plant; its friability, *pour ainsi dire*; whereas the *sclerotium* is horny, difficult to be cut, and not readily moved from the plant to which it adheres. He also stated having seen a plant, the lower part of which preserved its identic nature, while the upper half was *ergoté*.

Mons. Hazard suggested, that another means of ascertaining the difference between the *ergot* and the *sclerotium*, would be to institute some experiments on the effects of the latter on the animal economy, and to compare them with those which the *ergot* has been known to produce.

Mons. Portal read a memoir containing some considerations on vomiting. Dr. Majendie endeavoured sometime ago to show, that the stomach in vomiting is nearly passive, and that the diaphragm and abdominal muscles are the only agents in that phenomenon. In some of his experiments, Dr. Majendie had even pushed the demonstration so far, as to substitute a bladder in place of the stomach, (which had been removed in a dog) when by exciting the action of the above named muscles, vomiting was produced; i. e. the ejection of the coloured liquid contained in the bladder. Dr. Portal now comes forward with other experiments to prove that Dr. Majendie's general assertion was too hasty—that vomiting begins by a particular action of the stomach, as commonly supposed by physiologists in general, and is further continued by the action of the abdominal muscles and diaphragm, but, that in many cases, the latter are by no means necessary, as he states having ascertained, that vomiting may be produced in the stomach, where the abdominal parietes have been removed, a fact which he had occasion to observe in an experiment made for that purpose.

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*Royal Institution of Great Britain.*

Among other matters of interest which have been produced at these meetings, we cannot omit noticing the experiments upon congelation, by means of absorbents, made by James Stodart, Esq., in consequence of a communication from Professor Leslie, of Edinburgh.

The process of producing ice, or freezing water, under the receiver of an air pump, by exposing it to the absorbent powers of concentrated sulphuric acid, has long been known, and this experiment induced a supposition, that pipe clay and other absorbent earths, might produce a similar effect: accordingly, this and the trap rock, of Calton Hill, near Edinburgh, were tried by Professor Leslie, and found to answer the purpose. In the progress of his experiments, he observed, that the common coarse Scotch oatmeal, when dried before a fire, or in a kiln, but not over heated, was powerfully absorbent, and on being applied to the same purpose, answered most effectually.



A tin case of this, and another of the Calton Hill trap rock, previously dried and soldered up, were forwarded by Professor Leslie to Mr. Stodart, and with these, the experiment above mentioned was tried, with a powerful and excellent air pump, belonging to Mr. Leslie, which has three plates. Three substances were made use of, viz. the above oatmeal, trap rock, and dried tobacco pipe clay, disposed in common dinner plates. The water was contained in small unglazed Wedgewood pans, 3 inches deep each, while the water in them was half an inch deep. These pans were supported upon wire frames, a small distance over the absorbents, and a small thermometer was placed in each. In this state, they were covered with hemispherical glass receivers, and on working the pump, and producing a good vacuum, the water over the oatmeal became a solid cake of ice in eleven minutes; that over the trap rock in 13 minutes, and that over the pipe clay, shot into crystals of ice in about the same time, but did not entirely freeze. This was in June, and the thermometer in the room was at 67.

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### *Chemical Nomenclature.*

[From the Port Folio, for April 1817.]

M. AMPERE, a French philosopher, has published a sensible dissertation on the subject of a new arrangement of the chemical bodies, which is supposed to be necessary, in consequence of the late discoveries in that important branch of human knowledge. (*i. Ann. de Chim. et de Phys.* 295. 373. *et ii.* 5. 105. (He examines the properties of all the simple bodies, with great acuteness and perspicuity, and endeavours to form them into a natural system, in which they follow in a consecutive series, according to their several properties. Our limits restrict us to a mere outline of his classification.

#### CLASS I. GAZOLYTES.

##### Genus 1. BORIDES. (From boron.)

*Bodies forming permanent Acid Gases with Phthore.\**

Sp. 1. Silicon.

Sp. 2. Boron.

\* The hypothetical body called fluorine by Sir H. Davy.

Genus 2. ANTHRACIDES. (From *ανθραξ*.)

*Bodies combining with one of the Elements of Air, when exposed to it at a sufficient temperature, and forming permanent gases with the other element.*

Sp. 1. Carbon.

Sp. 2. Hydrogen.

Genus 3. THIONIDES. (From *θυον*.)

*Bodies capable of uniting with the preceding genus, and of forming gaseous or very volatile compounds.*

Sp. 1. Azote.

Sp. 3. Sulphur.

2. Oxygen.

Genus 4. CHLORIDES, (From *Chlorine*.)

*Bodies unalterable in the air, at all temperatures, forming with hydrogen acid compounds, gaseous or very volatile.*

Sp. 1. Chlorine.

Sp. 3. Iodine.

2. Phthorine.

Genus 5. ARSENIDES. (From *Arsenic*.)

*Bodies oxidated in the air, when exposed to it at a sufficient temperature, forming solid compounds with oxygen, and permanent gases with hydrogen.*

Sp. 1. Tellurium.

Sp. 3. Arsenic.

2. Phosphorus.

## CLASS II. LEUCOLYTES.

Genus 1. CASSITERIDES. (From *κασσιτερος*.)

*Bodies whose combinations with oxygen are decomposed by carbon, but not by iodine.*

Sp. 1. Antimony.

Sp. 3. Zinc.

2. Tin.

Genus 2. ARGYRIDES. (From *αργυρος*.)

*Bodies whose oxydes are decomposed by iodine and hydrogen.*

Sp. 1. Bismuth.

Sp. 3. Silver.

2. Mercury.

4. Lead.

Genus 3. TEPHRALIDES. (From *τεφρας* and *αλς*.)

*Bodies whose oxydes are decomposed by iodine, and not by hydrogen.*

Sp. 1. Sodium.

Sp. 2. Potassium.

Genus 4. CALCIDES. (From *Calcium*.)

*Bodies whose oxydes are not decomposed by carbon or iodine, but by chlorine.*

- |                |                 |
|----------------|-----------------|
| Sp. 1. Barium. | Sp. 3. Calcium. |
| 2. Strontium.  | 4. Magnesium.   |

Genus 5. ZIRCONIDES. (From *Zirconium*.)

*Bodies whose oxydes are not decomposed by chlorine, iodine, or carbon.*

- |                 |                   |
|-----------------|-------------------|
| Sp. 1. Yttrium. | Sp. 3. Aluminium. |
| 2. Glucinium.   | 4. Zirconium.     |

CLASS III. CHROICOLYTES.

Genus 1. CERIDES. (From *Cerium*.)

*Bodies brittle and infusible at the temperature at which iron melts.*

- |                |                   |
|----------------|-------------------|
| Sp. 1. Cerium. | Sp. 2. Manganese. |
|----------------|-------------------|

Genus 2. SYDERIDES. (From *sydeses*.)

*Bodies whose oxydes dissolve in acids in a state of purity, and form coloured solutions, only when concentrated, and whose peroxydes have not acid properties.*

- |                 |                |
|-----------------|----------------|
| Sp. 1. Uranium. | Sp. 4. Nickel. |
| 2. Cobalt.      | 5. Copper.     |
| 3. Iron.        |                |

Genus 3. CHREYSIDES. (From *chreyses*.)

*Metals unalterable in the air at all temperatures.*

- |                   |                 |
|-------------------|-----------------|
| Sp. 1. Palladium. | Sp. 4. Iridium. |
| 2. Platinum.      | 5. Rhodium.     |
| 3. Gold.          |                 |

Genus. TITANIDES. (From *Titanium*.)

*Infusible bodies whose pure oxydes do not dissolve in acids, and do not form with the alkalies compounds which can be considered as true salts.*

- |                |                  |
|----------------|------------------|
| Sp. 1. Osmium. | Sp. 2. Titanium. |
|----------------|------------------|

Genus 5. CHROMIDES. (From *Chromium*.)

*Bodies infusible at the temperature at which iron melts, acidifiable by oxygen.*

- |                  |                    |
|------------------|--------------------|
| Sp. 1. Tungsten. | Sp. 3. Molybdenum. |
| 2. Chromium.     | 4. Columbium.      |

*External Application of Sulphurous Acid as a Remedy.*[From the *Annals of Philosophy*, for October, 1817.]

Dr. De Carro, of whose ardent and successful attempts to propagate the vaccine inoculation in Austria we lately made honourable mention in a biographical sketch which appeared in our Journal, is now eagerly employed in prosecuting a set of experiments at Vienna to ascertain the value of sulphurous acid fumes externally applied, according to the method of Dr. Galès, of Paris, as a remedy in different diseases. Dr. De Carro has distributed amongst his friends the following short account of his institution:

“Although the utility of sulphur, taken internally, applied by friction, and mixed with natural and artificial baths, in many chronic diseases of the skin, the joints, the glands, and the lymphatic system, has been acknowledged from time immemorial, the most enlightened physicians have long desired some mode of administering the vapour of this mineral rendered acid, and more penetrating by combustion; and this wish was particularly expressed by a great physician of this capital, J. P. Frank, in his *Epitome de curandis Hominum Morbis*, Cap. Psora.

“Many contrivances more or less perfect, have been adopted at different times for the employment of the sulphurous acid fumigation; but none of them till the present have been so managed as to admit of being used without affecting the respiratory organs.

“At length, however, Dr. Galès, of Paris, has invented and brought to perfection a *Boëte Fumigatoire*, which appears to answer every purpose; and the success of which, since the year 1813, would appear almost incredible, were it not attested by the principal civil and medical authorities of Paris, and fully detailed in a memoir\* published in 1816, and distributed by order of the French government.

“Dr. Galès, who has obtained an exclusive privilege for this

\* *Memoire et Rapports sur les Fumigations Sulfureuses appliquées au Traitement des Affections cutanées et de plusieurs autres Maladies.* Par J. C. Galès, Docteur en Médecine de la Faculté de Paris, &c. Imprimés par Ordre du Gouvernement De l'Imprimerie Royale. Paris, 1816.



practice in the capital, and, as a national recompense, a pension for life of 6000 francs, has in his own house 26 sets of apparatus, for all of which he finds employment; and similar establishments, public and private, are daily multiplying throughout France.

"Struck with the great advantages of this remedy, I have established an institution for its exhibition, after having obtained the consent of the Imperial Government of Lower Austria, who have inspected the situation and the plan. I have devoted four chambers, containing two sets of apparatus, one for females, and the other for males, provided with proper attendants for each sex. The number of chambers, and the extent of the apparatus, will be increased according to its success. In order to be the more secure, and to avoid the difficulties inseparable from an imitation, I have procured the apparatus from Paris, constructed under the direction of Dr. Galès.

"The employment of the fumigation will never be left to the discretion of the patient; and no one will be admitted until he has consulted me, either alone, or in concert with other medical men.

"Wishing to facilitate beyond the capital, and in foreign countries, the adoption of this remedy, I shall always have, according to the example of Dr. Galès, sets of apparatus, made under my own eye, for those who require them; and these will be accompanied with small explanatory models, capable of being taken to pieces, in order to point out exactly the disposition of the different parts."

(Signed)

DE CARRO, M. D.

Vienna, July 15, 1817.

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*Process of M. Robiquet for the Preparation of Morphinum.*

A concentrated infusion of opium is to be boiled with a small quantity of common magnesia for a quarter of an hour. A greyish deposit in considerable quantities is formed: this is to be filtered and washed with cold water, and when dry acted on by weak alcohol for some time at a temperature beneath ebullition. In this way very little morphium, but a great quantity of colouring matter is separated. The solid matter is then to be filtered, washed with a little cold alcohol, and afterwards boil-

ed with a greater quantity of highly rectified alcohol; it is to be filtered whilst hot, and the spirit on cooling deposits the morphi-um in crystals, and very little coloured. This is to be repeated three or four times with the residuum, and the morphi-um obtained by each filtration, is less and less coloured.

*List of Patients admitted into all the Civil Hospitals of Paris, from the 1st to the 30th of July, 1817, both inclusive.*

Uncharacterised fevers	-	-	-	-	27
Intermittent ditto, various	-	-	-	-	206
Bilious or gastric ditto	-	-	-	-	243
Adynamic or putrid ditto	-	-	-	-	10
Catarrhal ditto	-	-	-	-	9
Phlegmasiæ, internal and external	-	-	-	-	80
Ophthalmia	-	-	-	-	23
Rheumatism	-	-	-	-	32
Diarrhœa and dysentery	-	-	-	-	13
Erysipelas	-	-	-	-	13
Phlegmasiæ of the organs of respiration	-	-	-	-	79
Consumption	-	-	-	-	36
Apoplexy and recent paralysis	-	-	-	-	16
Dropsy and anasarca	-	-	-	-	43
Small-pox	-	-	-	-	14
Metallic colics	-	-	-	-	10
Sporadic and chronic disorders, and the result of accidents	-	-	-	-	218
Itch	-	-	-	-	79
					<hr/>
					Total 1151
					<hr/>

*List of Patients admitted into all the Civil Hospitals of Paris, from the 1st to the 31st August, 1817, both inclusive.*

	From August 1st to	10th	20th	31st	
Uncharacterised fevers	-	-	11	12	8
Intermittent ditto, various	-	-	69	63	64
Bilious or gastric ditto	-	-	61	72	67
Adynamic or putrid ditto	-	-	6	18	8
Catarrhal ditto	-	-	0	0	1
Carried forward		147	165	145	

	brought forward,	147	165	145
Phlegmasia, internal and external	- - - - -	46	26	25
Ophthalmia	- - - - -	9	7	4
Rheumatic pains	- - - - -	14	14	11
Diarrhœa and dysentery	- - - - -	3	5	7
Erysipelas	- - - - -	0	4	4
Phlegmasiæ of the organs of respiration		0	30	29
Phthisis	- - - - -	10	12	17
Dropsy and anasarca	- - - - -	14	19	10
Apoplexy and recent paralysis	- - - - -	0	3	4
Variculous	- - - - -	1	7	6
Metallic colics	- - - - -	5	4	3
Sporadic and chronic disorders, and accidents		56	76	60
Itch	- - - - -	27	35	20
		<hr/>	<hr/>	<hr/>
		332	407	345

*Meteorological Report.*

	From July 1st to	10th	20th	30th
Maximum of barometer		28.2 $\frac{7}{15}$	28.2 $\frac{1}{15}$	28.3 $\frac{7}{15}$
Minimum of ditto (centigrade.)		27.11 $\frac{6}{15}$	27.7 $\frac{3}{15}$	28.0 $\frac{1}{15}$
Max. of thermometer		20°	19°	21°.9
Min. of ditto		12°.9	10°	10°
Max. of hygrometer		97°.2	98°	91°
Min. of ditto		84°	87°	87°

CHEVALLIER, Optical-Engineer.

*On Poisoning with Arsenic; by JAMES KERR, Esq.*

[From the London Medical and Physical Journal, for August, 1817.]

READING in the newspapers, in April last, an account of the very important trial of a surgeon, at Falmouth, on a charge of murder, I anxiously waited in expectation of seeing, in your valuable Journal, some remarks on a case in which the medical public is so much interested. But, as nothing has appeared except a notice of it under the head of Medical Intelligence; containing nothing conclusive, and in which the experiments of Dr. Neale are not mentioned, I beg to submit to your readers a few remarks on the subject.

As the circumstances of the case may not be known to all your readers, I shall briefly state them. A surgeon, practising

at Falmouth, was indicted for poisoning his mother-in-law, by giving her arsenic. The principal witness for the prosecution was Dr. Edwards, of the same town, who, amongst other particulars, stated, that, upon trying the contents of the stomach with the test of sulphate of copper with carbonate of potash, a green precipitate took place; and on trying another portion with carbonate of potash and nitrate of silver, the yellow precipitate so well known was the result; that he had not a sufficient quantity to attempt the re-production of metallic arsenic, but he was quite satisfied with these experiments as determining the existence of arsenic.

Fortunately for the prisoner, Dr. Neale, of Exeter, was examined as a witness, who stated that he did not consider the above experiments as at all to be relied on, and then related the result of two experiments which appeared completely to invalidate those of Dr. Edwards, and, no doubt, considerably influenced the jury in their decision.

Dr. Neale also stated that he thought nothing short of the re-production of metallic arsenic could be satisfactory. Dr. Neale's experiments were as follow:

1st. To a solution of sulphate of copper a small quantity of decoction of onions was added; a solution of phosphate of soda dropped into this mixture, produced a green precipitate very much resembling the Scheele's green.

2d. To a solution of phosphate of soda was added some decoction of onions: on applying the nitrate of silver, a yellow precipitate took place, resembling that which occurs, when a solution of arsenic is used.

There is one circumstance connected with the case of the deceased which greatly adds to the merit and applicability of these experiments, and that is, the deceased had dined on rabbit and *onion-sauce* a few hours before her death; and, as many of the animal fluids contain phosphate of soda, we readily perceive the source of each substance from which the analogy was taken.

A few days after reading the account of this interesting trial, I went over the experiments of Dr. Neale, and repeated them before three medical friends of this town, the results of which, with some observations, I shall now state.



In Dr. Neale's first experiment, I found the green precipitate so exactly resembling that from a solution of arsenic, that I was induced afterwards to repeat it on a larger scale, so as to obtain a small lump of it in a dried state, and then the resemblance to the Scheele's green was remarkably striking. In his second experiment the result is so much like that made with arsenic, that it would puzzle most people to distinguish them; if there be any difference, it is that, when the phosphate of soda is employed, the precipitate is of a more beautiful sulphur colour than when arsenic is used. It may be proper to mention, that, in this experiment, the decoction of onions is not at all necessary, its addition or omission making no difference in the colour of the precipitate; but, in the first experiment it is indispensable, the peculiar green precipitate not taking place till it be added.

As a further elucidation of the subject, I took the lump of green precipitate before mentioned, and laid it on a red hot iron, holding over it a plate of polished copper: it soon became a black cinder, without at all affecting the copper. On substituting a lump of arsenite of copper, or Scheele's green, white fumes are exhaled, and the copper plate is immediately covered with a white coat, in the same manner as when white arsenic is employed.

The conclusions to be drawn from these experiments appear to me to be of considerable importance to the public in general. We now see two experiments, which, though not considered quite conclusive, were thought to be strongly corroborative, rendered completely nugatory. In your Journal for December, 1815, is a paper by Mr. Crowfoot, in which, after trying the two experiments made by Dr. Edwards, and that with the copper plates, the writer says, "From the whole, therefore, though every experiment produced conviction of the fact, it may be useful to state that the weakest proof was that by the action of heat, and the strongest and most decisive by the *admirable test of Mr. Hume.*" Yet who will place confidence in this test in future? I hope this will not be understood as any censure of Mr. Crowfoot. So far from any intention of that kind, I take this opportunity of stating that I read Mr. Crowfoot's communication at the time with great plea-

sure, and had not the least doubt of its accuracy. What surprises me is, that Mr. Hume and other excellent chemists should not have been acquainted with the fact, that phosphate of soda produces with the nitrate of silver the same beautiful yellow precipitate that arsenite of potash does. In searching for information on this subject, I found, in your Journal for 1816, under the head of Medical and Physical Intelligence, that "an ingenious student at Guy's Hospital" had suggested this fact to Dr. Marcet; but, what is very curious, he goes on to say, "Yet in juridical cases other tests may be requisite to be assured of the presence of arsenic. The addition of sulphate of copper and potash, and the formation of Scheele's green, affords a *very satisfactory confirmation*." After the first experiment of Dr. Neale, I am inclined to think this "ingenious student" will have his confidence shaken in this test as well as in the other. In consulting the celebrated work of M. Orfila on Toxicology, I cannot find that he was acquainted with either of these facts. In a note to page 113, of vol. I. part I. he says, "It may readily be conceived that the nitrate of silver lately proposed by Mr. Home (Hume) for discovering the arsenious acid, ought to be a very uncertain test in a great number of cases. In fact, if the quantity of arsenious acid mixed with the aliments is very small, and these contain muriates, there ought to be formed, at the same time, a small quantity of arsenite of silver of a yellow colour, and a great deal of muriate of silver of a white; in such manner that the precipitate would appear of this last colour, whilst it ought properly to be yellow." Here it is evident that, had M. Orfila known that phosphate of soda would produce the same yellow precipitate, he would have mentioned it. Nor can I find any mention of a green precipitate produced in any way, but by the help of arsenious acid, or white arsenic.

I have thus endeavoured to show how much obligation we are under to Dr. Neale; for, although previous mention was made of the yellow precipitate, I believe he was the first to inform us, that an apple-green precipitate resembling the arsenite of copper or Scheele's green, could be produced without the existence of arsenic.

*Great Yarmouth, June 12, 1817.*

### VACCINATION.

Agreeably to the provisions of an ordinance of the city councils, passed June 5, 1816, for the gratuitous vaccination of persons in indigent circumstances, residing within the city of Philadelphia, five physicians were appointed; who have reported that, from July 1st, 1816, to June 31st, 1817, they had successfully vaccinated nine hundred and six persons.\*

### DISPENSARIES.

The three Dispensaries have published statements of their proceedings during the last year, from which it appears, that the number of patients under the care of these institutions have been as follows:

#### *Philadelphia Dispensary.*

From December 1, 1816, to December 1, 1817,	3019
Cured - - - - -	2712
Relieved - - - - -	60
Dead - - - - -	87
Irregular or uncertain - - -	46
Removed - - - - -	31
Remaining under care - - -	83—3019

#### *Northern Dispensary.*

From December 30, 1816, to December 1, 1817,	1480
Cured - - - - -	1208
Relieved - - - - -	55
Dead - - - - -	107
Irregular or uncertain - - -	41
Removed - - - - -	29
Remaining under care - - -	40—1480

#### *Southern Dispensary.*

From December 31, 1816, to December 1, 1817,	2497
Cured - - - - -	2040
Relieved - - - - -	145
Dead - - - - -	60
Irregular or uncertain - - -	207
Removed - - - - -	20
Remaining under care - - -	25—2497

Making a total of six thousand, nine hundred and ninety six patients.

\* Eight hundred and thirty-four persons have been successfully vaccinated, in 1817, in the Northern Liberties and District of Southwark by the Physicians of the Vaccine Society.

**METEOROLOGICAL OBSERVATIONS.**

State of the weather at Philadelphia during the last six months of 1817.

**JULY.**

Thermometer—Lowest, at 9 A. M. 64. 25th of the month.

Highest, at 3 P. M. 87. 30th.

Mean, . . . . 78.

Winds variable—between east and west, most westerly.

**AUGUST.**

Thermometer—Lowest, at 9 A. M. 59. 25th of the month.

Highest, at 3 P. M. 86. 19th and 20th.

Mean, . . . . 75.

South and westerly winds most prevalent—heat much greater to the north-eastward, but little thunder and lightning here. A pleasant summer—warmer than the last. All the crops abundant, particularly hay, and well got in. Vegetables and fruit good. The fever prevalent at Charleston—unusual quantities of fish this summer on the coasts of New-England, and the news-papers filled with accounts of the appearance of a very large sea serpent in those parts.

**SEPTEMBER.**

Thermometer—Lowest, at 9 A. M. 50. 31st of the month.

Highest, at 3 P. M. 84. 11th.

Mean, . . . . 70.

Westerly winds prevailed—refreshing rains through the summer. Fever at New Orleans—large ice islands met with the beginning of this month, on the banks of New-foundland.

**OCTOBER.**

Thermometer—Lowest, at 9 A. M. 39. 30th of the month.

Highest, at 3 P. M. 68. 23d.

Mean, . . . . 55.

Winds, chiefly western—little rain—severe hurricane in the West Indies, 21st of the month—Fever at Savannah in Georgia, and at the Natches in Louisiana.



NOVEMBER.

Thermometer—Lowest, at 9 A. M. 31. 25th of the month.

Highest, at 3 P. M. 73. 12th.

Mean, . . . . 55.

Northerly and westerly winds most prevalent.

DECEMBER.

Thermometer—Lowest, at 9 A. M. 10. 21st of the month.

Highest, at 3 P. M. 54. 2d.

Mean, . . . . 40.

Winds westerly—very little snow—on the 21st inst. the thermometer at 10 A.M. in an exposed situation, stood at 10°. The season has been healthy in this city—a number of vessels arrived during the summer and autumn, crowded with German passengers, amongst whom there has been great mortality. No measles—small pox scarcely heard of at present. The typhus or hospital fever has been common in England and Ireland, during the last autumn. The plague has been epidemic in Algiers, and parts adjacent. The disease, generally called yellow fever, has been prevalent and mortal at Charleston, Savannah, New Orleans, and the Natches, during the last autumn—no appearance of it to the northward of Charleston, and no account of any other epidemic in the United States.

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LIST OF RECENT EUROPEAN PUBLICATIONS.

MEDICINE, SURGERY AND ANATOMY.

The Edinburgh Medical and Surgical Journal, No. 57.

Observations on the Diseased Manifestations of the Mind or Insanity; by J. G. Spurzheim, M. D. with 4 plates, 8vo.

Surgical Observations; being a Quarterly Report of Cases in Surgery; by Charles Bell, Surgeon of the Middlesex Hospital; Part IV. 8vo.

A Compendious Dictionary of the Veterinary Art; by James White, Veterinary Surgeon, 18mo.

Pharmacopoeia Collegii Regalis Medicorum Londinensis 1809, Editio Altera, 18mo.

The Continental Medical Repository; conducted by E. Von

**Embsen**, assisted by other Gentlemen of the Faculty, No. I.  
(to be continued quarterly.)

Remarks on Insanity: chiefly with reference to the Physical Symptoms, founded on the Practice of John Mayo, M. D.  
By T. Mayo, M. D. 8vo.

Picture of the College of Physicians, 8vo.

A Physiological System of Nosology. By J. M. Good, F.R.  
S. 8vo.

Delineations of the Cutaneous Diseases comprised in the Classification of the late Dr. Willan; by T. Bateman, M. D.  
P. L. S. Fasciculus X; with coloured plates.

Cases of Diseased Bladder and Testicle, with 21 Etchings;  
by W. Wadd, Esq. Surgeon, 4to.

An account of two successful operations for restoring the lost Nose, from the Integuments of the Forehead, By J. C. Carpué, Esq. with plates, 4to.

Observations on the Harveian Doctrine of the Circulation of the Blood; by A. Ewing, M. D. &c.

An Essay on the Mode by which Constitutional Disease is produced from the Inoculation of Morbid Poisons; by C. Salt, Member of the College of Physicians.

The New London Pharmacopœia correctly translated from the last Latin Edition; by R. J. Thornton, M. D.

Gerbaux on the Teeth, 12mo.

Medical and Miscellaneous Observations relative to the West India Islands, by John Williamson, M. D. &c. 2 vols. 8vo.

#### BOTANY.

A Practical Introduction to Botany with numerous Figures;  
by the Rev. M. Bingley.

Conversations on Botany, with 20 engravings, 12mo.

The Midland Flora; by J. Purton, 2 vols.

#### NATURAL HISTORY.

Outlines of Geology, being the Substance of a Course of Lectures, delivered in the Royal Institution; by Wm. Thomas Brande, 8vo.

THE  
ECLECTIC REPERTORY  
AND  
ANALYTICAL REVIEW.

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VOL. VIII.

APRIL, 1818.

No. II.

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SELECTED PAPERS.

*An account of some remarkable Symptoms, which were connected with a Painful Affection of the extremity of the Left Thumb, together with the mode of treatment.* By JOHN PEARSON, Esq.  
F. R. S. F. L. S. M. R. I. Senior Surgeon of the Lock Hospital, &c. &c.

[From the Medico-Chirurgical Transactions, Vol. VIII. Part 1.]

**LADY —**, aged eighteen years, was attacked suddenly by an acute pain on the inner part of the left thumb, near to its extremity, on the 14th of November, 1814. The pain extended gradually to the first articulation; but it was unattended by redness, tumefaction, or any other visible character of disease. The lady supposing that this acute pain indicated the commencement of a whitlow, immersed her thumb in hot water, several times in the day; and deriving no relief from this, she applied a poultice of bread and milk, which seemed rather to aggravate her sufferings. After the lapse of about fourteen days, she consulted a surgeon, who directed two leeches to be applied on the affected part, and the poultice to be continued.

On the following day the thumb became inflamed and swollen as far as the second joint, and had acquired so high a de-

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gree of sensibility, that Lady — experienced a most severe pain from the slightest touch, and the muscles of the part were no longer capable of voluntary motion. The fore-finger of the same hand soon became disordered by a similar affection, was morbidly sensible in a high degree, and its muscular powers were equally obstructed. The three remaining fingers of the left hand were gradually subjected to the agency of this disease; they participated slightly in the morbid sensibility of the thumb and fore-finger, but their flexor muscles became so much contracted, that the nails of the fingers were pressed forcibly against the palm of the hand; they were no longer under the control of the will, and every attempt made to extend them, was attended with insupportable pain.

This disease proceeded by degrees, from the thumb and fore-finger, to the fore-arm; the skin and muscles became painfully sensible, the joint of the elbow was contracted; and in a short period of time, very little power of voluntary motion remained in the brachial muscles, from the shoulders down to the hand. Lady — was now obliged to suspend her arm in a sling; the sensibility of the whole limb had become inexpressibly distressing; the bulk of the arm likewise diminished gradually; so that in the space of about three months, it was reduced not less than one inch in its circumference, between the elbow and the wrist. The right arm became, by insensible degrees, involved in this extraordinary morbid affection; it acquired a painful sensibility, and a considerable diminution of its muscular powers. Lady — was not indeed obliged to support it with a sling, but the debility was such, as to render her unable to use a pen; and had she been capable of this effort, the pressure necessary for the sustaining and employing of so light a substance, would have excited an insupportable access of pain. The right arm never exhibited any discoloration, intumescence, nor indication of atrophy; it admitted also of such motions as did not expose any part of its surface to external pressure; she likewise enjoyed occasional intervals of relief from suffering, extending from twenty-four to forty-eight hours; yet, even during these periods of comparative ease, she was quite disabled from raising a small weight, or using any exertion that required the compressing of a solid body.

In the course of a few weeks from the commencement of this disease, her ladyship began to complain of pain and debility in the lower extremities: this morbid condition of these parts allowed of frequent intermissions; but whenever she was suffering from an omission of pain, she was rendered incapable of walking. During the intervals of these attacks, she experienced a great weakness of the lower extremities, and nearly an inability of locomotion, being incapacitated from using exercise for more than a few minutes, at any one time.

From an early period after the attack of this disease, and while it was making an alarming progress, her ladyship was attended by very respectable professional gentlemen, who resided in her own neighbourhood; she occasionally derived a temporary benefit from their assistance, but the more prominent symptoms of her complaint were not subdued.

Early in the Spring of 1815, Lady — was removed to Edinburgh, and had the advantage of consulting some of the most eminent physicians and surgeons in that city. Various tonic and antispasmodic medicines were prescribed, and different topical applications were employed; but no considerable relief was derived from any of them. She was then advised to take mercury in small doses, with a decoction of sarsaparilla, and from these remedies she seemed to obtain some benefit; but her appetite becoming quickly impaired, and her strength visibly decreasing, she soon abandoned this course of medicine, it being judged expedient to forbear from any further trial of mercury.

It having been recommended to her ladyship to have recourse to cold bathing, she used the shower bath, and likewise went to the west for the convenience of immersion in the open sea. She was commonly refreshed and invigorated by bathing; yet, notwithstanding the partial advantages which resulted from these means, the pain, spasms, and morbid sensibility of the superior and lower extremities continued to harass her ladyship with unabated severity. In the month of February, 1815, the case of Lady — was transmitted to me, and I was favoured with some correspondence on the subject by Mr. George Bell, surgeon in Edinburgh, in the month of March;



but these epistolary communications were not productive of any important benefit to her ladyship.

In the month of August, 1815, the Countess —, her mother, having relinquished almost all hope of her daughter's recovery, determined to place her under my immediate care; and the young lady being quite unequal to the circumstances of so long a journey in a carriage, she was sent to London by sea, in the beginning of September.

Lady — was greatly refreshed by the sea air, and the voyage had contributed to improve her appetite and exhilarate her spirits; but the original symptoms of her disorder continued much in the same state, as before her departure from Scotland. At my first visit, September the 6th, I found the left arm considerably wasted; the thumb and fore-finger not contracted, but so exquisitely sensible, that they could not endure the pressure of the slightest substance; the three contiguous fingers were inflected, firmly, into the palm of the hand; the joint of the elbow was contracted, and the whole arm had become preternaturally and painfully sensible to every impression. The right arm had acquired a high degree of sensibility, and was extremely weak; but there existed no contraction of any joint, nor conspicuous atrophy of the limb. I learnt also, that in addition to the unceasing state of suffering to which her ladyship had been so long accustomed, she had extraordinary accessions of pain and spasm, during several hours, every two or three days; and that, on these occasions, the muscles of the forehead and face were so much disturbed by convulsive motions, as to change considerably the natural appearance of her countenance. At this time the health of Lady — was delicate, but not sensibly impaired: the catamenia more regular, yet rather too abundant, and sometimes approaching to menorrhagia; under these circumstances there commonly occurred an exacerbation of her local complaints. She suffered likewise from leucorrhœa, and her bowels were generally confined, requiring the occasional assistance of gentle aperients.

On contemplating the present state of Lady —, in conjunction with the written narratives which had been transmitted to me, I was confirmed in the opinion which I had previously formed, that the several distressing symptoms which afflicted

her ladyship, were immediately connected with a morbid condition of the nerves distributed to the extremity of the thumb. As every attempt to elevate and extend the three contracted fingers, met with much resistance and excited considerable pain, I was desirous of ascertaining whether those two circumstances were to be attributed chiefly to a rigid state of the joints, or to a permanent spasmodic state of the flexor muscles. To gain information on these points, I stimulated the surface of the skin covering the muscles on the inside of the fore-arm, very gently with a piece of thick gold wire, the point of which was blunted; and was agreeably surprised to find, that by continuing this process during a few minutes, the fingers were raised spontaneously, from the palm of the hand, without exciting any sensation of pain. On discontinuing the mechanical stimulant, the fingers gradually resumed their habitual state of contraction. I repeated this experiment on three or four successive days. At the first, the sensation produced by the irritant was not disagreeable; but on each succeeding trial, after the first day, it induced a sense of uneasiness and fatigue in the parts affected, which became at length almost insupportable; nor was the degree of relaxation, subsequently remarked in the flexor muscles of the fingers, nearly equal to that which was conspicuous on its first application.

Lady — was now directed to take some tonic medicines, and various powerful narcotic applications were made to the thumb, and to the hand; but no sensible benefit was derived from them.

During the course of many years' practice, several cases of the local affection of a nerve or nerves, accompanied by muscular spasms, had occurred, and had often proved very untractable. I was at length induced to attempt the cure of these painful complaints, by inflicting a disease, which should extend over a large portion of the surface of the body; and which, after exciting a series of actions in the skin, should finally cause an extensive eruption, attended with the usual concomitants of certain exanthemata. The disease from which this young lady was suffering, having resisted, hitherto, all the efforts of professional skill, and as the most serious consequences were to be apprehended from its continuance, I thought myself justified



in adopting a mode of treatment, which, although painful and inconvenient, was unattended with danger, and would leave no unfavourable impression on the general constitution.

I directed a stimulating liniment \* to be rubbed during ten minutes, twice in the day, over the whole circumference of the upper part of the arm, beginning immediately below the joint of the shoulder, and included a space bounded by the inferior extremity of the deltoid muscle. No local effects upon the skin being perceptible at the end of three days, I added half a drachm more of the sulphuric acid to the composition, and desired that it might be applied three times in the day. This application was first used on September the 23d, and on the 5th of October the upper arm began to look red, and was more painful than usual. I had given express directions, that on the first appearance of redness and tumefaction of the part, the further application of the liniment should be suspended; but the young lady, anxious to derive all possible advantage from this medicament, succeeded in prevailing on her attendant to persist in applying it. The liniment was accordingly used during the incipient state of inflammation, and in the space of little more than an hour, the whole arm, from the shoulder to the hand, was red, heated, tumid, and very painful. These symptoms became gradually more intense, and were diffused more extensively, increasing progressively during five days. Within this period, a number of small vesicles containing a pellucid fluid appeared on various parts of the arm; the face became swollen as in the acute erysipelas, and vesicles were distributed on different parts of its surface; the cellular membrane of the eyelids was likewise so much distended as to obstruct vision completely. The whole surface of the body, indeed, partook of these morbid appearances; but the vesicles were scattered very sparingly over the trunk and lower extremities.

\* R Olei Olivæ ꝑiss.

— Terebinthinæ ꝑiss.

Acidi Sulphurici ꝑi. M.

I have been more than thirty years accustomed to use this liniment in various complaints, especially in those of the joints. I inserted it in the Pharmacopæias of the Lock Hospital, and of the Public Dispensary, when I first became connected with these institutions.

During the progress of this exanthematose affection, Lady — maintained her accustomed fortitude and cheerfulness; and although her pulse was much increased in frequency, her sleep was greatly interrupted, and she was considerably incommoded by the local irritation, yet her health did not appear to be materially disordered. On October the 12th, the heat, redness, tumefaction, and uneasiness of the arm, were so much diminished, that her ladyship obtained some refreshing sleep on the sofa, and from this period she recovered visibly every day. About the fifth day after the appearance of this cutaneous disease, Lady — observed her thumb to be agitated by a spontaneous motion, unattended with pain: this excited some degree of alarm in her mind, but she was most agreeably surprised to find, that on touching her thumb, the morbid sensibility was gone, and she could hold it with the fingers of her right hand, without exciting any sense of uneasiness.

The thumb and forefinger of the left hand, having now lost their morbid sensibility, they became gradually capable of regular voluntary motion: the disease was removed, and the affected arm and hand were acquiring strength and regaining daily the facility of performing their customary actions. The salutary change in the three contracted fingers, was not very sudden; they relaxed, however, by slow degrees, but the ring-finger and the little finger did not resume their natural appearance and regular power of action till after the lapse of five or six weeks. The contraction of the elbow-joint amended slowly, but at the expiration of little more than two months from the application of the rubefacient, all appearance of the disease had vanished; the hand and arm had nearly regained their former bulk and form; and Lady — has enjoyed good health, with perfect freedom from every symptom of her complaint, since the beginning of the year 1816, to the present period.

As a conclusion to this paper, I beg leave to subjoin a few observations connected with this subject. The records of medicine and surgery contain a multiplicity of narratives of extraordinary symptoms resulting from pressure on particular nerves; from various injuries inflicted on them, and from morbid alterations in the structure of these organs of sensation. We likewise possess reports of the several modes of treatment

adopted, some of them suggested by reasoning, others derived from observation, or from accident; yet a large proportion of them tending to show how unavailing the best directed efforts of our art frequently are, in conferring permanent relief on the patient. In the year 1795, I published a paper containing accounts of some extraordinary symptoms arising from pressure, &c. on certain nerves, in the Sixth Volume of the "*Medical Facts and Observations.*" At that period, I was unacquainted with the particular method of treatment which has been described in the preceding history; nor do I conceive that it was applicable to the cases recorded in that paper.

It must have occurred to every person conversant with physiology and pathology, that the morbid sensations and disordered actions which are often consequent on the agency of an external cause, or on a diseased condition of the sentient organs, exhibit considerable variety in the phenomena. A nerve may suffer injury from the infliction of a wound from a laceration, or a contusion, forcible elongation without any solution of continuity, mechanical pressure, from chemical agents, including heat and cold, from a change of its structure, conspicuous to the senses, and capable of being displayed by anatomical examination; it may likewise exhibit a deviation from its natural functions, for which no preceding cause can be assigned, and where nothing unusual in its appearance or organization has been detected by subsequent dissection. These circumstances, with many others, which might be enumerated, seem to warrant the suspicion, that the diversified phenomena which are consequent on the several impressions made on one or more branches of particular nerves, may imply some existing difference in the previous condition of the sensitive organ whence they are derived; that the various and often dissimilar symptoms may depend on some specific physical modification of the morbid part, or of those connected with it by a proximate union; or that the morbid state is controlled by the laws of consent or sympathy. If there be any foundation for these conjectures, then it may be regarded as probable, that a correct acquaintance with the symptoms which are peculiar to each form of the disease, would conduct to a more methodical and successful mode of treatment.



That mode of sensation which is commonly designated by the term pain, implies the state of corporeal uneasiness or suffering, experienced by a percipient being; and pain being usually conjoined with certain adjuncts, which are objects of distinct consciousness to the patient, our common language is competent to express in a very great number of instances, not merely the measure, but likewise the distinguishing qualities or circumstances which indicate a specific difference in the uneasy sensation. These discriminating characters are most obvious in parts where there exists a great dissimilarity of structure, and in organs which are appropriated to the execution of very different functions; to which may be added, the modifications that are derived from the various existing causes, whether remote, or proximate.

It is not unknown to persons conversant with much practice, that pain may be accompanied with a sensation of heat or cold; of distention or contraction; of torpor, laceration, comminution; that it may be pungent, lancinating, pulsating, or attended with convulsive motions, rigid muscular contraction, fainting, &c. A practical application of our knowledge of the several concomitants of pain, may assist us in forming a correct diagnosis of the morbid alteration that has taken place in the seat of a disease; and it may sometimes prove a most valuable and important guide, when it is necessary to carry our inquiries into the nature of a complaint which exists in parts that are removed from the immediate scrutiny of the senses.

In the preceding narrative, it is stated, that the pain and morbid sensibility were accompanied by a permanent spasm in the three fingers, and in the joint of the elbow; and, by interrupted convulsions, in other affected parts; yet, as the *spasmi tonici* could be readily suspended by gently irritating the cutaneous nerves of the inner part of the fore-arm, I did not regard the condition of these flexor muscles, as indicating any essential difference in the nature of the case, or requiring any peculiar attention in directing the mode of treatment. I had learnt from long observation, that, in certain morbid affections of particular nerves, when the topical remedies designed to promote relief, were applied immediately, to the primary seat of the disease, they commonly failed of conferring benefit on the

patient; and I believe, that unless in those instances where the malady is derived from some mechanical cause acting upon a nerve, situated within the range of an operation, the division of the sentient organ is not generally effectual in removing the distressing symptoms. It has been frequently remarked, and my own experience confirms the truth of the observation, that where a serious accident, such as the infliction of a large wound, an extensive burn, the invasion of a disease affecting the whole surface of the body, or greatly disordering the functions of the animal economy, has occurred to persons infested by convulsive maladies, a temporary suspension, and not unfrequently a permanent cure of these complaints has been the salutary consequence. In the course of contemplating facts like these, and combining them with the phænomena resulting from the agency of counter-stimulants, employed in diseases which are situated both externally and internally, I was first induced to try the powers of medicaments applied at a distance from the part referred to, as the primary and immediate seat of pain; and likewise to attempt the making a powerful impression on the surface of the body, consisting of a regular succession of actions on the skin, bearing some analogy to the progress of exanthematose affections. This curative progress is more peculiarly applicable in diseases conjoined with the morbid state of a nerve, where there is reason to presume, that the part referred to as the source of the symptoms, is in reality the original seat of the malady.

When a punctured wound is inflicted on one of the toes, or a finger, by a small and sharp instrument, as a needle, or the fine point of a pair of scissors, a filament of a nerve is sometimes injured. The minute wound commonly heals immediately; but the muscles of the limb frequently become subject to spasmodic affections, during many months after the infliction of the injury, and the skin, with the subjacent parts, indicate a preternatural sensibility when pressed upon. In one of these cases, where the arm and hand of a young lady had become nearly useless, and the symptoms had been combated by all the usual remedies, in vain, during twelve months, the patient was cured by the application of the liniment, which excited a considerable tumefaction of the whole arm, with a vesicular

eruption. It was necessary, in this case, to produce the cutaneous disease three times, at intervals of about a week, and it never extended beyond the upper extremity. In some cases, likewise, of painful contractions of the large joints, which were unaccompanied by inflammatory symptoms, or any remarkable change in the structure of the parts, a similar mode of treatment has been attended with complete success, after the common methods of cure had been employed, during many months, without the least advantage. I think myself warranted to insist on the cutaneous excitement, with its concomitant appearances of tumefaction, and of an eruption, more or less extensive, as circumstances essential to the obtaining of a cure in these peculiar affections of a nerve. It is proper to mention in this place, that there exists a very striking difference in the susceptibility manifested by the skin of persons suffering from these complaints. In some patients it is so irritable, that the concurring symptoms produced by the rubefacient appear in the course of two or three days; whereas ten days or a fortnight may elapse before any heat, redness, or tumefaction shall be seen in others; and in a few instances, no sensible change on the surface of the skin, nor any beneficial alteration, has occurred from a long continued application of the liniment. It is, by no means, my intention to speak of this compound, as possessing any specific or peculiar qualities which give it a superiority over every other rubefacient; but I merely represent this formula, as being the application which has succeeded more certainly and beneficially than any other stimulating medicament that I have employed. Cantharides, tartarized antimony, a solution of gum ammoniac in the vinegar of squills, and sometimes euphorbium, &c. are capable of exciting cutaneous irritation very extensively; but I think these effects occur with less certainty, are not so durable, nor of equal efficacy, as when the compound sulphuric liniment is used. Neither the mode of treatment which I have now recommended, nor any other method yet made public, can be expected to succeed in every case, where a nerve is morbidly affected; but I believe, that the liniment may be always employed without danger, and very frequently with the most desirable result, provided the direc-

tions suggested in this paper, be conformed to strictly, and with a judicious constancy.

This mode of treatment is not applicable to that diseased condition of the nerves, in which a conspicuous morbid alteration is discernible in their structure; where little tumours, resembling noduli, are found in some of the largest ramifications of these organs of sense, connected with pain, lameness, muscular spasms, and sometimes with atrophy of the disordered limb. The existence of tumours, thus situated, has been noticed by different writers \*; but I am not aware that a satisfactory account has been presented to the world, of the differences which subsist in these productions, and of the rise, progress, and ultimate change of structure which occurs in nerves when infested by such diseases.

I am not authorized by experience, to offer any information on the effect of this mode of treatment in cases of the *tic douloureux*; when nerves proceeding immediately from the cerebrum are the subjects of this painful disease, temporary relief is often conferred, and sometimes permanent benefit has been obtained by dividing the nerve whence the suffering seemed to be derived; but it must be likewise acknowledged, that this operation has often failed of curing the disease. In an instance, where the painful affection was referred to one finger, the patient was relieved by the amputation of the part; but a similar disease soon attacked one of the fingers of the other hand. The nerves distributed to different parts of the face have also been successfully divided, until very little of the surface of the skin remained, which had not been subjected to the operation. I never saw any real benefit derived from the division of a branch of a nerve, in either the upper or lower extremities, unless in those cases where the agency of a mechanical cause, or some well-defined change of structure existed. When no deviation from the natural condition of the part can be detected by the most able and accurate examination, and when parts at a distance from the immediate seat of the pain, sympathize on every accession of the paroxysm; there is ground for presuming, that the source of the malady resides in some other por-

\* Vide Med. Facts and Obs. loc. cit. See also Portal, Anat. Medicale. The Edinburgh Medical and Physical Journal.

tion of the nervous system, and that the division of the nerve in the part whence the pain seems to originate, may prove rather injurious, than beneficial. This unfavourable issue of an unsuccessful operation, is not an assumption founded on mere reasoning or analogy: cases have occurred, where the patient has not only been disappointed of relief, but the irritation has been transferred, subsequently, to the spinal marrow and the brain.

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*On the Effects of the Nitro-Muriatic Acid Bath in several Surgical Diseases.* By G. J. GUTHRIE, Deputy Inspector of Military Hospitals, Lecturer on Surgery, &c. &c.

[From the London Medical Repository, for December, 1817.]

DURING the last two years, at the recommendation of Dr. Scott, we have tried the nitro-muriatic acid bath, in the York Hospital, Chelsea, in a variety of cases, both medical and surgical; especially in those where the use of mercury was supposed to be indicated, and where it had failed of producing a good effect, or had been obviously detrimental.

The manner of using the bath, as well as the proportions of acid, were varied; it was tried as a pediluvium, as a bath to the lower extremities, or to the whole body; of a strength to turn the skin and nails yellow, to produce the pricking sensation that has been attributed to it, as well as an eruption of pimples that were equally disagreeable; and it has been used so diluted, that many patients have immersed the body to the head every other day, and occasionally every day, from fifty to eighty times, without perceiving any sensations upon the surface whatever, except those which are equally produced by water of the same temperature; that is, from 90° to 95° Fahr.

In our first trials the acid was used in the proportion of three parts of nitric to one of muriatic; and the acid so mixed was not measured, but poured into the warm water until it became very sour: this changed the colour of the nails, and was only used as a pediluvium. By the advice of Dr. Scott, it was used in the proportion of eight ounces to forty gallons, and sub-



sequently to twenty gallons, when it was employed as a bath; and with these proportions the greater part of our experiments were made. In particular cases, and especially at a later period, it has been used considerably stronger, with equal portions of the two acids, and with three parts muriatic to two of nitric, the quantity of acid being increased to twenty ounces in twenty gallons of water, and even to two ounces to the gallon.

Having thus noticed the composition and manner of using the bath, it is desirable that the general effects should be next specified, according to the different proportions of the acids to each other, to the water, and to the surface of the body exposed to its influence: but this becomes exceedingly difficult, if not impossible, from the circumstance of its not producing any perceptible effect on many persons on whom it has been tried, in whatever proportions it has been used, except what might be equally attributed to the warm water alone. I beg, however, not to be misunderstood. I do not mean to imply that the remedy has no powers; on the contrary, it does occasionally produce particular effects which are not usually attributed to water alone; yet I wish to give it as my opinion, that no dependance can be placed on any particular proportion, and that it is very uncertain in its operation: although I am disposed to believe, what I think many will as willingly concede, that the larger the surface to which it is applied, provided it be not of a strength to affect the skin, the more certain will be its effect. It naturally follows, as a conclusion, that I can have little or no reliance upon simple immersion of the feet and hands. At present I recommend the bath, where there are no abraded surfaces, to the whole body, except the head, in the proportions of half an ounce to an ounce of the equally-mixed acids to a gallon of water, at the temperature of 90° to 95°, according to the strength of the patient. If he have not strength to bear a warm bath of that heat for fifteen or twenty minutes, or the use of it is inconvenient, I desire the person to sit down in it; and if it be used with the view of relieving pains in the legs and thighs, I sometimes confine myself to the immersion of the parts affected.

I have said the remedy sometimes produces no effect, or a permanent effect which can be discovered the day after its use;

yet the complaint for which it has been recommended shall slowly subside or disappear, whilst in other instances it shall remain stationary, or gradually get worse. In all these cases I am aware it may be said that no effect has in reality been produced, but that nature has caused the amendment or deterioration by her own efforts, either properly or improperly directed: but I dissent from this proposition, because I have seen in many of these cases the good or bad result too evidently depend on the use of the remedy, not to believe that it had a principal share in producing it.

In general, the acid bath increases the quickness of the pulse, causes, like the warm bath alone, a general relaxation of the body, and, if continued, may produce syncope. On coming out of the bath, a variety of sensations, in the same manner, may or may not supervene. When it agrees with the patient, there is no perceptible effect, save a greater redness of the skin than what the warm bath occasions. In others, there is swimming of the head, nausea and even absolute sickness, general uneasiness; and, in several cases where there has been a predisposition to it, the testicle has suddenly swelled, become painful, and even inflamed; and this has again occurred on a repetition of the bath after a certain interval of time. The repeated use of the bath sometimes occasions a degree of general excitement, the pulse quickens, the tongue becomes white, the patient feels uneasy, or, as he expresses it, a little feverish: in such a case it must be discontinued. In others, after a continued use of it, the patient looks pale, loses flesh, and is certainly debilitated. In some cases the immersion at once produces a sensation of the mouth in an increase of saliva, and in others the flow of it is more permanently increased: on examination, the gums look red and swelled, although not affected in the same way as by mercury, neither does the mouth emit the same fœtor. This state of the mouth and the increased flow of saliva, must be considered as symptoms which do not occur after the use of the warm bath; but there is another and principal effect, which much more commonly, indeed I may say generally, follows its use; that is, a greater degree of regularity and increase in the alvine evacuations, and sometimes a greater desire for passing urine, than has been experienced for some time,

although there may not be an increase in the secretion of urine. As Dr. Scott has truly remarked, in people who are disposed to a naturally large secretion of bile, the quantity for the time seems increased, and may require the aid of purgatives for its removal. In those where the secretion of bile appears to be deficient, in consequence of derangement in the action of the liver, its effects are in many instances more remarkable than those I have observed to follow the use of other remedies: it gradually increases the secretion of bile, restores in consequence the proper action of the intestinal canal; the evacuations become more regular, more natural in colour and consistence, and the functions of the digestive organs are altogether improved. In some cases it even proves completely purgative. I am not, however, prepared to say that this happy change, when it does occur, will continue; on the contrary, I am disposed to believe it is only a temporary amendment; and that, when there is truly organic disease or derangement of structure, these good effects will soon cease, although they may, after an interval of time, be again induced by a repetition of the remedy.

In one case this was shown in a remarkable degree. The patient had had the Walcheren fever during the expedition to that island, and had suffered ever since from visceral disease, with great and solid enlargement of the abdomen; his bowels were very irregular, an evacuation taking place only once in two or three days. Shortly after he had commenced the use of the bath, the bowels became regular every day, and continued so for some time; but they gradually returned to their former state, although the bath was continued, and the man, finding that no permanent benefit was obtained, preferred going home to his friends in the country.

In another case the patient had been ten years at the Cape of Good Hope, had suffered considerably from inflammation of the liver, and for the last five years had been constantly unwell. He laboured under severe pain in the epigastric and both hypochondriac regions, which was much increased at intervals; he was unable to lie on the left side, and had occasional spasms of the abdominal muscles, with so great a soreness of the surface as hardly to allow the slightest pressure. There was a sense of great weight in the right hypochondrium, a sallowness

of countenance, loss of appetite, and general appearance of ill health.

This man took a variety of medicines, principally mercury and laxatives, as his bowels were always irregular and confined, and the warm bath was used to try the comparative effect of it and the acid bath; but, although persisted in for six weeks with much benefit, still it had no effect on the bowels. At the end of this period the acid bath was used instead of the warm bath, and the effects on the bowels were observable the next day, and have continued, with evident advantage to the patient.

This effect, which is certainly the most constant of any which has been yet observed, is still, however, not general. In many persons it does not take place, and in these it does not appear to be useful; so that we may, I suspect, attribute any efficacy it possesses, especially in the cure of bilious complaints, to its power of increasing the secretion from the liver and intestinal canal.

The soreness of the mouth occurred in a few instances, not more than six, on whom it was tried, under my immediate observation, and then not to any extent; which renders it doubtful whether that state of the gums arose from any specific effect of the acid, or whether it simply took place in consequence of the increased general excitement which ensued from its use after mercury had been previously and frequently employed; which was the case in four of the six instances alluded to. In the fifth and sixth, the gentlemen who used it for derangement of the functions of the liver, as was supposed by their medical attendants, had not taken mercury previous to using it, except as an occasional purgative; and they complained of its rendering their gums sore: but it was not carried to any satisfactory extent. I have since seen the mouth affected in several cases; but, in all, the patients had taken considerable quantities of mercury for the cure of their complaints, although in some a year had elapsed since they had omitted it. But whether it be dependent on this cause, or whether it be the specific effect of the acid, is not sufficiently ascertained to induce us to consider it as a regular effect of the remedy, which may be naturally expected when its use is persisted in to a certain extent.

Sir James M'Grigor, when surgeon of the 88th regiment in  
VOL. VIII. X No. 30.



India, in the years 1799 and 1800, tried the nitric acid bath, alone and in conjunction with other remedies, in a great variety of cases, and with the best effect. On referring to the papers he has been so good as to allow me to read, I find that at that period he had formed nearly the same opinion of its effects as I have done more lately. He used it generally of a strength to irritate, and to turn the soles of the feet and the nails yellow, and repeated it sometimes even three and four times in the day. He says, "that nitric acid used externally and internally does affect the salivary secretion, I no longer doubt, from the examination of not less than 800 persons, and from measuring the saliva ejected. Salivation is not, however, a constant effect of the use of these remedies; it is by no means so much so as from the use of mercury; and I do not recollect a case where the fœtid breath or ulceration of the gums which follow the use of mercury was remarked. The use of the bath alone occasions a redness and swelling of the gums, and it never fails to hasten a flow of saliva where mercury is used, as we have often seen in desperate cases of hepatitis and dysentery."

The opinion that the acid bath is an excitant, acting more powerfully than the warm bath, receives some confirmation from the circumstance of its use in persons suffering from chronic inflammation of the eyes, rendering this state of disease more active, although not at the same time more curable, which is exactly opposite to the general effects of mercury in similar cases.

In several cases of intractable ulcers, supposed to depend on constitutional, not local causes alone, the bath had a fair trial, with various success. The first case in which I saw it used was that of a burrowing ulcer at the root of the penis, supposed to have been originally syphilitic, and for which mercury had proved ineffectual. It was used to the feet and legs so strong as to change the colour of the skin; and in this case it produced an increased flow of saliva with soreness of the mouth, but without any curative effect, the man recovering many months afterwards by common surgical means.

In a case of intractable ulcer of the nates, spreading in a circular direction at its external edge, and healing at its internal with a corresponding celerity, it totally failed, or was rather detrimental.



In a third case, the patient, eighteen months previous to his admission into the hospital, whilst in India, suffered from a small eating ulcer on the left side of the nose and lip; which gradually spread across to the opposite side, producing a very disagreeable and painful sore; which was also accompanied by ulceration of the tonsils, and for which he underwent several courses of mercury without any benefit: during his return to England the ulcer healed by simple treatment, and continued well until the month of December 1816, when it broke out again on the right side of the lip, assuming its old action, and spreading up by the side of the nose, which was generally large and increased from inflammation, whilst it also made progress to the opposite side in the track of the old cicatrix, having altogether an appearance that promised any thing but a speedy cure. On the 20th of January he was put on the use of the acid bath every second day, and directed to take two pints of the decoctum sarsaparillæ compositum every twenty-four hours; and under this treatment, without any sensible effect being produced, a gradual amendment took place until the 30th of March, when he was discharged cured of the ulcer, and his general health greatly improved.

In this case, I consider the bath to have been of most essential service, although the acid used was in small quantity, twenty-four ounces to forty gallons; and if future trials shall prove it to be useful in other cases of the same description, so as to destroy the idea of its being accidental, the remedy will be valuable from this circumstance alone: for, when I first saw the man, I had not the least hope of his recovery in as many months as he was cured in weeks.

In chronic rheumatism, and chronic pains, I have found it sometimes accelerate the cure, and especially when combined with other means, without producing any perceptible effect beyond the amendment of the patient.

An officer had been afflicted for several years with pains in his limbs, which were so much increased on becoming warm in bed that he could not sleep; and they often distressed him so much as to induce him to get out of bed and roll himself on the floor in agony. His general health was indifferent, he was thin and sallow, the digestive organs were considerably derang-

ed, his bowels were irregular and flatulent, and his tongue generally white. He was relieved in the course of three or four days by alteratives combined with narcotics, and by attending to the state of the bowels: these remedies were persevered in for a few days longer, when he was in every respect better, his sleep improved, the pains diminished, but they were still distressing, and occasionally severe. The acid bath was now ordered to the feet and legs every night, and of a strength to produce pimples on the skin, which were rather encouraged, within bounds, than otherwise. It was continued, in addition to the remedies alluded to, for the space of three weeks; at the end of which period the gentleman had entirely lost his pain, slept well, and was in a much better state of health than he had been for a considerable time.

This case, which was under the care of Dr. Charles Forbes, I consider a good instance of the utility of the bath in the cure of chronic pains, judiciously used in addition to other remedies: when tried alone, it has been generally unequal to afford permanent relief.

In scrofula the effects have been equally variable. It was principally tried in cases where different glands were enlarged, suppurating, or in a state of ulceration, and with the same result as in every other disease in which I have seen it used: in some few it appeared to promote a cure; in others, the disease remained for a time stationary; whilst in a third set every symptom was aggravated. It would be very desirable here, also, to have it in our power to distinguish these cases one from another before the remedy was resorted to; but I have not been able to observe, neither have any of the gentlemen who were equally or more interested than myself been able to remark any one sign or difference of appearance in those persons, which could in the slightest degree guide us in the application of the bath. The good or bad effect to be expected from it could not then, by any previous observations of ours, be anticipated; it was ordered on speculation, and from the effects produced during its use, we could only judge of the propriety of continuing it.

I am however more disposed to believe, on an attentive consideration of the whole, that it will be found more useful in

those cases in which there is actual suppuration and ulceration, than where there is only simple glandular enlargement.

In the most prominent case in which it was tried, the patient had long laboured under the disease, had been sent to the hospital as incurable, and was incapable of wearing any thing round the neck, from the ulcerated state of the glands and parts extending round the neck in front from ear to ear. Dr. J. Forbes and Mr. Dease, under whose care he was, determined on trying the bath, as well as on using the nitro-muriatic acid internally. He commenced the use of the bath in the weak proportion, on the 15th of January, and continued it every other day with little intermission until the 26th of April, 1816; during which time a soreness of the gums and an increased flow of saliva had taken place, which may probably be attributed to the acid taken internally. The ulcers gradually amended during this period, but about the latter part of it inflammation came on in the part, and the man was attacked with fever; the acids were now omitted, and he used the warm bath alone; but the inflammation soon showed itself to be truly erysipelatous, rapidly extended to the forehead, and successively to the breast, and indeed to the whole body. From the second day the delirium was constant, and the danger extreme. The temporal artery was opened three times in one day, and he lost upon the whole a considerable quantity of blood: his treatment being purely antiphlogistic. This case was altogether one of the most remarkable of its kind I have seen, and the successful termination of it was entirely owing to the constant attention, as well as the decision and ability of the gentlemen under whose care he was. The man completely recovered from both diseases, the last of which may, I am aware, be attributed by some to accidental causes, unconnected with the use of the bath; but as I have seen an erysipelatous inflammation occur after its use in another case of the same kind, although in a less serious degree, and without any beneficial effect, I am disposed to believe they are not entirely independent of each other, although they do not follow as cause and effect. The original disease is, however, so serious and distressing, as well as for the most part incurable by common means in the state to which I have alluded, that I should have no hesitation in continuing the use of the bath in



those cases in which it appeared to produce a good effect, even if I had reason to suspect from the constitution of the patient that an attack of erysipelas would ensue. The misfortune we have most to lament, is not however the sudden appearance of this complaint, but the deterioration of the original disease, after it has for a time remained stationary, or been considerably ameliorated whilst the patient was using the bath; and when this is perceived, it must of course be immediately abandoned.

I have not used the nitro-muriatic acid bath for the cure of the primary symptoms of syphilis, because it would have interfered with another object I had in view; but I am inclined to believe it would be very useful in such cases. In the papers of Sir James M<sup>c</sup>Grigor to which I have alluded, I find the effect of the nitric acid bath was to shorten the duration of the primary ulcers; and when the acid was also given internally in conjunction, that the ulcers were cured in as short a time as when mercury was exhibited. But if it were not used for the cure of primary ulcers, it had a fair trial in many cases of secondary symptoms. From among them I have selected the following, as showing some of their different kinds and stages, and its effects upon them. In some, where it may be doubted whether the cases were, according to received opinions, truly syphilitic; and in others, in which the ill effects of repeated and protracted courses of mercury will be discoverable.

#### CASE I.

The Paymaster Sergeant of the 4th Veteran Battalion, about the latter end of September 1816, whilst at Quebec, perceived a discharge of matter from the urethra, and shortly afterwards an ulcer made its appearance on the right side of the corona glandis and fold of the prepuce, near the frænum; for these he took about twenty-four mercurial pills, which did not affect his mouth: the gonorrhœa got well, but the ulcer remained the same, a few spots making their appearance about this time on his neck. He embarked for England on the 27th of October, and soon after saw the same kind of spots on the forehead and other parts of the body. On the 10th of November he was shipwrecked on the coast of Newfoundland, where he was much exposed to cold and privations of every

kind, and the eruption rapidly increased. He came under my care on the 26th of December, when he thought the eruption better, that is, rather fainter in colour; for he had not observed any of the well-marked spots to disappear, some being small, others on the forehead as large as a shilling, scaly, and having the appearance of the syphilitic lepra; his throat was rather sore in swallowing, but no ulceration could be perceived. The ulcer on the penis, which was smaller than formerly, did not look unhealthy at bottom, but was surrounded by a thick hardened edge, extending to the touch under it; forming a welt, and there were two or three little excoriations near it: his general health was otherwise good. I pointed this man out to the gentlemen attending as a good case of syphilitic eruption, and a fair case in every respect to be allowed to run its own course.

On the 14th of January the ulcer was healed, but the hardness surrounding it remained, the eruption scaling and fading in colour. On the 7th of February, as he made little progress, the nitro-muriatic acid bath was ordered every other day; between that and the 16th the welt on the penis ulcerated, the scaliness of the ulcers disappearing slowly, and the mark remaining. On the 20th he complained that the bathing made him perspire, and that his eye was inflamed; on examination there appeared a slight redness of the conjunctiva, but the pupil was irregular, and there was an uneasiness hardly amounting to pain; the extract of Belladonna was ordered to be applied. 22d. The iris was in part amenable to the Belladonna, showing an irregularity of pupil on the outer and inner side, as if it adhered to the capsule of the lens behind; the external redness increased in the manner peculiar to inflammation of the iris; the colour of which was not perceptibly altered, except at the point of apparent attachment; no pain; the sight not impaired. The spots on the body disappearing; the hardness on the penis subsiding under the ulcerative process, which is slow. I did not consider it fair to push this experiment further; and as I knew the low inflammation of the eye would be best relieved by mercury, I therefore directed him to omit the bath, to rub in two drachms of the ungt. hydrarg. fort. every night, and to take ten grains of the Pil. Hydr. three times a day. On



the 24th, the iris was half dilated and regular, with little or no external inflammation, and the pills were omitted. On the 26th, the mouth being completely affected, the ointment was omitted; ten-drachms having been used and twelve pills taken. March 4th, the hardness around the site of the ulcer gone. On the 12th of April he was discharged perfectly well.

#### CASE II.

A soldier of the 51st regiment received a blow on the eye on the 9th of November, for which he came under my care, and recovered from the immediate injury, vision having been previously destroyed by inflammation, by the 28th of the same month; at this time he was attacked by fever and sore throat, and called my attention to a papular eruption which was coming out over his body, but particularly on his breast, arms, and face. The fauces, on examination, were found inflamed, the tonsils ulcerated, especially the right. He confessed to having had a sore on the glans, the mark of which was to be seen, in the month of September, that he had taken a few pills, which had not affected his mouth, and that the sore soon after healed. The gentlemen attending supposed it might be venereal, and a fair case to see the effect of mercury; I rather wished them to observe the case without it, and at all events none could be given during the eruptive and febrile stages. Saline and antimonial medicines were ordered, with common gargles. On the 5th of December the fever subsided, and the head-ache was relieved. On the 9th the throat was easier, the papulæ were acuminated and resembling pustules. On the 12th, the sloughs in the throat separated; the fever was nearly gone; and the papulæ were scaling, but not scabbing. 18th. The eruption perfectly resembled Mr. Carmichael's plate of venereal lichen (Fig. 5. Plate 2d;) the throat was better; but the ulcers not healing. Ordered the pulv. ipec. comp. gr. x. three times a day, a gargle of lime water, and the linimentum æruginis. On the 10th of January, there being little alteration, the nitro-muriatic acid bath was added to the treatment. On the 20th the throat was well, and the eruption fading in colour. A pint of porter was ordered, in addition to the meat diet, the man appearing very thin and weakly. In the beginning of February the porter was omitted,

and the pulv. ipecac. comp. gr. xv. given twice a day. On the 20th, as he continued weakly and the spots were fading, the powders were omitted; and from this period he gradually or slowly improved until the 12th of April, when he was discharged, fat, well, and free from spots, excepting where a small mark remained. He took no medicine after the 20th of February, and, although he bathed to the neck nearly eighty times in the acid bath, no effect could be perceived that might not equally be attributed to the warm water.

## CASE III.

A soldier of the waggon-train, in March 1816, perceived a bubo in the right groin, without any primary ulcer, for which he was taken into the hospital; the bubo suppurated, broke, and kept him six months in the hospital; during which period he took mercurial pills, rubbed in twenty-six nights, and in all had his mouth made sore five different times. Soon after his discharge he caught cold and had a sore throat, which was not well in the beginning of December, when he caught another cold, and immediately after an eruption appeared all over his body, first about the haunches, then on the breast, the shoulders, and the extremities. On the 28th of December the tonsils were ulcerated, although not very deeply, the body was covered with a copper-coloured scaly eruption, small in size, and resembling Mr. Carmichael's plate of venereal lichen (Fig. 6.); the general health was otherwise good. He was ordered the most simple remedies; a common gargle, gentle opening medicine, and fifteen grains of the pulv. ipecac. comp. twice a day: diet low. Under this plan he slowly improved; the throat amended, the eruption faded, although it did not disappear; but he lost his strength and was placed on meat diet. On the 4th of February he commenced the use of the nitro-muriatic acid bath, and on the 8th changed the pulv. ipecac. comp. for one pound and a half of the decoct. sarsap. comp. This plan he continued until the 21st of March, when he was discharged cured, having bathed twenty-two times without producing any perceptible effect.

To the first case no objection will I think be made, as to the syphilitic history and nature of the disease, by any one. The symptoms were all slowly disappearing when the affection of the

eye induced me to excite a mercurial action, under which they totally disappeared, and faster I conceive than they would have done without it. The quantity of mercury, according to received opinions, was not, however, enough to secure the patient from relapse: indeed it was not given to cure the venereal complaint, but the inflammation of the eye. The man is still under observation.

To the second and third cases, some will say they were venereal, not syphilitic; and others may suppose that the mercury taken in the first instance caused the development of the ulterior symptoms, which would not have appeared or remained so obstinate if it had not been given. The cure in all three might have been expedited at an earlier period by a gentle course of mercury, although, in the two last, it was proved not to be essential, although it might have been useful. In a fourth case, exactly like the last, which occurred a year before, the sudorific plan with the strong nitro-muriatic pediluvium was tried for three months with little effect, the eruption fading but not disappearing, when a gentle course of mercury perfectly removed it.

The length to which this paper has already stretched, will scarcely permit us to give the three following cases in detail. In the fourth, a patient at Chipping Ongar, in Essex, about four years back, contracted an ulcer on the penis, followed by two buboes, for which he went through a course of mercury without any benefit, save the retrocession of the buboes, the ulcer gradually deteriorating. In December 1813, he was again put on the use of mercury, when the penis sloughed off, and several hæmorrhages occurred, which nearly destroyed him. The ulceration at last healed, but was soon followed by sore throat, nodes, &c.; for which he underwent twelve more courses of mercury without any permanent benefit. Towards April 1816, he was something better, and commenced the use of the nitro-muriatic acid bath; from which he received no benefit at first, and was then ordered the decoction of sarsaparilla, &c. with considerable effect. Having caught cold, he relapsed, in July 1816: and remained in various states of health until July 1817. During this period he repeatedly used the acid bath; on one occasion, it affected his mouth, and increased his pains; on

another, it was omitted in consequence of its causing sickness and vomiting; on a third, a swelling of the testis, and an increase of ulceration in the throat. In July the man slowly recovered, and went out of hospital; but has since returned with all his complaints aggravated: he is again trying the bath, but I do not suppose it will be more efficient than at a former period.

In the fifth, from the repeated courses of mercury, the disease was considered mercurial; he was admitted in September 1815, and getting better under the use of the sarsaparilla, when the acid bath was tried, but with evident bad effect; the throat ulcerating, nay, sloughing largely; the ulcers spreading, and the pain increasing. The bath was omitted, and the patient, after fifteen months' suffering, was discharged cured; the good effect seeming to arise from the continued use of gentle doses of mercury, combined with the more usual means in such cases.

In the sixth case, the patient contracted a gonorrhœa at Madrid, in October 1813. Without any other previous affection, an ulcer appeared in the throat, in October 1814; which was called venereal, and treated by mercury, during the administration of which he was exposed to wet and cold. The disease followed nearly the same course noticed in the fourth case, and with the same effects in regard to the acid bath. In July 1817, he was discharged cured, although in a debilitated state, and has not had a relapse.

From these cases, and many others of the same description in which it was tried, it will appear, that the acid bath is like all others, an uncertain remedy in what are called the secondary symptoms, or the sequelæ of syphilis, or of mercury; and although it may succeed in some instances, where all other remedies have failed, still it cannot maintain a character as a principal remedy, entirely superseding the use of mercury and those medicines more commonly administered. If I were to point out those symptoms which did not appear to be benefited by its use, I should name the ulceration of the throat and the pains in the bones.

It is not a little remarkable, that the nitro-muriatic acid bath should have obtained a high character, although used in a

variety of ways, and in very different proportions as to strength. It is on this account that I am disposed to attribute a part of the good effects resulting from its use to the warmth of the water. I am perfectly aware that Dr. Scott supposes the acid to be equally efficient when used with cold water; but there are many cases in which it may be used cold with greater advantage than warm, and I have one at present under my care; but I have not had sufficient experience to enable me to give an opinion. I doubt it as a general position.

I have shown that the acid bath has two principal effects: one, that of promoting the secretions from the intestinal canal, even with pain, and often proving completely purgative. The other, although infinitely more uncertain, of increasing the flow of saliva, and especially if mercury has been previously used. It cannot then be denied to possess considerable power. As a remedy, although extremely uncertain in its effects, it is peculiarly applicable in those diseases in which the use of mercury and of alteratives is indicated; in many cases it may and will be successful where these have failed, but should not be relied on altogether as superseding their use. It will, on the contrary, be found more efficient on many occasions when used as an auxiliary, in combination with them.

In all cases of constitutional derangement dependent on the state of the primæ viæ; in nervous cases dependent on the same cause; in derangement of the function of the liver, and of the chylopoietic viscera—it will often be found of essential service. In many cases of this description we are uncertain whether there be alteration of structure or not, although the derangement may be complicated with ascites or other disease: if these complications be also cured, we think we have cured an organic disease, and that our mode of practice or our remedy is the more valuable. I do not believe the acid bath alone is equal to mercury in the influence it exerts in this class of diseases, although it is, even in them, a valuable aid. In the cases I have seen or heard of, with the exception of one or two, in which it was supposed to have had this good effect, the rapidity with which it was induced, as well as my knowledge of its failure in others, have led me to believe that an alteration of this kind could not have been so speedily accomplished.



To those who only value observations on a remedy when the prove it to be decidedly good or bad, I am aware my remarks can be of no use: to those who are disposed to make trial of a remedy which has many good qualities, although it is not always certain in its effects, yet is frequently useful, and seldom or never detrimental, they may perhaps afford some little assistance. My object in this paper has been to state what have been the general results of the trials made of the acid bath in the York hospital.

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*Observations on the Function and some particular States of the Organ of Hearing; with a description of a newly-invented Instrument for Puncturing the Membrana Tympani.* By JACOB VALE ASBURY, Member of the Royal College of Surgeons, and Licentiate of the Society of Apothecaries, in London.

[From the London Medical Repository, for September, 1817.]

THE ear is an organ so ingeniously adapted to the purposes for which it is designed, and contributes so largely to our most exquisite and refined enjoyments, that it presents, to such as are disposed to examine its minute mechanism, a most interesting subject of investigation. The distressing consequences which result from a diminution or loss of its faculty, place those so circumstanced out of the reach of much mental intercourse, and

“Wisdom at one entrance quite shut out\*,”

renders the unhappy object perhaps more solitary than he who has sustained the loss of sight. Therefore, when the functions of the ear are impaired, whatever means can be suggested, in order to remove this morbid state, and to restore its lost energy, are of the utmost importance both on a physical and moral consideration.

When we reflect on the economy of this organ, and the multifarious parts of which it is composed, the diseases affecting

\* MILTON.

it do not appear so numerous as might, *a priori*, have been expected; yet, the obscure situation of the most essential parts, and the difficulty attending the removal of any morbid affection of them, render it a subject worthy of the deepest attention.

The effects of obstruction of the Eustachian tubes, and the most simple and easy mode of removing it, will be the principal subject of which I mean to treat. These canals, which lead from the fauces to the tympanum, must remain pervious, so that the *membrana tympani* may the better receive the pulses of sound; which, giving mobility to the air within, are thence transmitted to the *membrana fenestræ ovalis*, and thence to the *portio mollis*. If the air in the *cavitas tympani* be confined, the action of this membrane must be so limited, that the sonorous rays will produce no effect on it; neither under these circumstances can there be any motion given to the confined air; consequently deafness must ensue. This is daily manifested in those who are much exposed to cold; which, producing an increased secretion from the mucous membrane of the *fauces*, the Eustachian tubes become obstructed; and when this secretion is restored to a healthy condition, the patient's hearing returns. In those complaints, however, such as *scarlatina*, *cynanche tonsillaris*, &c. where inflammation sometimes extends to the organs of hearing, the tubes become permanently obstructed by the secretion of coagulable lymph; and finally by adhesions, which obliterate the passages. In this case it is necessary to make an opening into the *cavitas tympani*, to answer the purpose of the Eustachian tube, and this can only be done with propriety through the *membrana tympani*.

This operation has been successfully performed; but it should be observed, that the success attending it is limited; and, that in a short time after the operation, the patient has, in consequence of the opening closing, experienced the same degree of deafness. This has unjustly brought the operation into disrepute, and merely because due attention has not been paid to all the circumstances of the case.

The want of success, I conceive, may result from two causes; either from the opening not being made sufficiently large to remain pervious, or from the inflammation produced by the

injury which the parts have sustained in the operation. That these causes may depend on the kind of instrument which is employed, I am much disposed to believe, and for the following reasons: If the extremity of the instrument be small, as is the case with the trocar used for this purpose, the opening which it makes must be small also; and hence there is the greater probability that it will again close; if, to enlarge the opening, the instrument be urged forward, then there is every chance of its wounding the opposite side of the *cavitas tympani*, and occasioning inflammation; which, by extending to the *membrana tympani*, may produce a thickening of it, and closure of the aperture. There are cases recorded, and others with which I am personally acquainted, that justify me in this opinion. If the Eustachian tubes are obstructed, without organic defect of the internal structure of the parts, or constitutional affection of the individual, and yet the operation fails, in what other way can the failure of it be explained? Either the opening must be too small, or such an injury be done to the parts as to excite inflammation; and which ever of these happen, the operation proves an additional evil to the disease. I have punctured the *membrana tympani* with a triangular probe\*. It gives temporary relief; but, in the course of a week, the hearing is often as defective as before the operation. This of course can be accounted for only by the closing of the aperture.

From these considerations, I had an instrument made by Mr. Blackwell, of Bedford Court, Covent Garden; the cutting part of which, is an equilateral triangle, one eighth of an inch in each direction, and resting on the plain surface of a bisected bulb, which has, proceeding from it, an iron wire, a line in diameter, terminating in a small octagonal handle. The point of this instrument can only enter the tympanum to the eighth of an inch, as it is then arrested in its further progress by the bulb. The base of the triangle is sufficiently large to make an opening in the *membrana tympani*, that will admit the softened

\* Mr. Brookes, the celebrated anatomist, to whom I am much indebted for my anatomical knowledge, inculcates the puncturing with this probe, provided a more convenient instrument is not at hand. He expressly states, that no harm can arise from simply puncturing the *membrana tympani*.

extremity of a small bougie, which may occasionally be introduced to keep open the aperture, when this precaution is necessary. The diameter of the tympanum is about double the length of the point of the instrument; therefore no injury can possibly ensue to the opposite side; and as the membrana tympani itself is supplied only with very few vessels, the occurrence of inflammation from the perforation with this instrument must be extremely rare. The appearance of blood on the instrument after the operation, will show whether it has penetrated too far.

The triangle is fixed in the radius of the bisected bulb, for the purpose of avoiding the manubrium mallei and chorda tympani. The former of which is attached to the upper part of the membrana tympani; the latter crosses it transversely, and may generally be seen in the form of a white cord at the bottom of the meatus. Therefore, if the instrument be introduced with the cutting angle in the lowest direction, it will enter that part of the membrane which is beneath both of them, where there is nothing to injure; and the flat surface above the angle will come against the chorda tympani. There are two white spots in the handle corresponding to that part of the instrument which in operating must be kept uppermost. So little is the chorda tympani concerned in the function of hearing, that a wound or division of it is regarded by some as of no consequence; but it appears to me probable, that injuring it may diminish the sensibility of the parts exterior to the labyrinth. I am by no means inclined to argue this point; but it is evident that no good can arise from disturbing this nerve; therefore I altogether avoid it.

It has been suggested, that the instrument would answer better, if curved, so as to correspond to the obliquity of the meatus auditorius externus. But, although the passage takes a course at first upward and forward, then making rather a sudden turn downward and backward, yet it proceeds afterwards horizontally to the membrana tympani. The obliquity therefore may be removed by taking the pinna of the ear between the thumb and finger of the left hand, and drawing it a little backward and upward; then, the instrument being in the right hand, observing that the two white spots in the handle



are directed upwards, it may be introduced with great ease. It is right to bear in mind also, that the membrana tympani is not placed horizontally at the bottom of the meatus; but that it takes an oblique direction; so much so, that it forms a very acute angle at the lower, and an equally obtuse angle at the upper side of the boney external meatus; to which it is at first nearly parallel. If, therefore, the instrument be curved, so as to correspond to the obliquity of the passage, with its convexity upward, while the concavity is applied to the convexity of the lower side of the meatus, the cutting angle will not only enter the lowest part of the membrane, but it will also wound the bottom of the cavitas tympani. In this position indeed the opening of the tympanum will be quite uncertain, for the instrument may enter at the acute angle formed by the union of the membrana tympani with the lower side of the meatus externus.

A short time since I had a case of deafness, resulting from an attack of scarlet fever in 1802, which had been attended with violent inflammation of the tonsils and adjacent parts. The patient could not hear unless she was spoken to in a loud tone of voice. As the constitution was perfectly good, I immediately punctured the membrana tympani. I was instantly apprized of success, by the patient declaring with a strong emotion of joy, that she could "hear the clock tick;" that her "ears cracked;" afterwards, succeeded a confused noise, and sounds were distinguished that she had not heard since the scarlet fever. Her hearing soon became exceedingly painful. In a short time, by putting a small piece of wool into each meatus, the sensibility of the organ diminished, and it adapted itself to the new impressions of sound; and the patient finally declared, "I can hear almost as well as I could at fifteen." The same success attended a similar operation, where one of the Eustachian tubes was obstructed.

Another young lady had laboured under a defect of hearing for five years. It had declined gradually till she was incapable of hearing a conversation in any tone of voice. There was a defective secretion of cerumen. From examination of the state of the Eustachian tubes, I found that by closing the mouth and nose, and then attempting to expire, she could not



distinguish the least noise in the ears; consequently I concluded, that they were obstructed; although, from the gradual approach of the deafness, without any previous affection of the fauces, I had some doubts. But as no harm could arise, I punctured the membrana tympani; and I regret to add, that the operation did not succeed. This failure induced me more accurately to examine the state of the Eustachian tubes; and on the patient clearly understanding, which she did not before, what I meant by a sensation of swelling in the ears when forcibly expiring, she was sensible upon further trial, of such an effect. This, therefore, proved a case in which the operation could not be expected to succeed, because the air within the cavitas tympani was free. This patient had decidedly a scrofulous habit. I immediately adopted a suitable mode of treatment, from which she derived considerable advantage. She took a calomel pill and saline purgative every seventh day; and in the interval, mineral tonics. I ordered the ears to be fumigated three times a day, with strong camphorated spirit\*; and stimulated night and morning by a liniment composed of ceratum resinæ, oleum olivæ, and a small portion of tinctura lyttæ, and spiritus ammoniæ compositus applied with a camel's hair pencil. By these means I hoped to restore the secretion of wax. In this regimen she persevered as long as I thought requisite; and she now enjoys conversation in the society of her friends. By occasionally varying the internal and external remedies, she is still sensible of improvement.

There are numerous cases on record which directly prove, that the membrana tympani is not essentially necessary to the faculty of distinguishing sound; therefore we may conclude, that it can be punctured without detriment. Mr. Astley Cooper has noticed an instance, in which the membrana tympani of one ear was totally destroyed by disease, and that of

\*This was proposed to me by my ingenious friend Mr Edward Turner Bennett, who also suggested Mudge's inhaler as a fit apparatus to be used in this case. I procured one, and set it upon an iron stand four inches high; then filling it half full of hot water, I added two tea spoonfuls of strong camphorated spirit, and placed a spirit-lamp underneath. The vapour rose through the flexible tube, the extremity of which was then applied to the external meatus.

the other nearly so; the deafness appeared inconsiderable; and the hearing in the ear, in which no trace of the membrane could be found, was distinct. In similar cases, the ear is sometimes acutely sensible of musical tones, and accurately judges of time. Some persons are capable of driving smoke from the mouth through the meatus externus\*; and in them there is great accuracy of hearing. In this instance, the opening in the membrana tympani must be formed artificially, and most likely by the efforts of the individual; as the most exact researches, I believe, have discovered no such communication existing in the natural structure of the parts. But a natural foramen is particularly described by Professor Rivinus, of Leipzig, whose name it long bore. This foramen, however, is not admitted by modern anatomists to exist. I have repeatedly found this opening in cats and some other animals; but I never could trace the smallest appearance of it in man.

If we enquire into the use of the ossicula in the *cavitas tympani*, they also are by no means necessary for distinguishing sound; since, in cases where there has been inflammation and suppuration of the cavity destroying the membrana tympani, so that the bones have escaped, the sense of hearing has still remained. But in these cases, the membrana fenestræ ovalis must remain entire, otherwise the aqueous contents of the labyrinth would escape; whereby all power of hearing is completely destroyed. If, when the parts external to the labyrinth are lost, sounds can be distinguished, it follows that the *ossicula* have no share in transmitting the sonorous vibrations, the contrary of which has been generally believed, and that the air in the *cavitas tympani* gives the impulse of sound to the fluid of the labyrinth. Otherwise how is it that an obstruction of the Eustachian canals diminishes, in so great a degree, the faculty of the organ? The air thus confined cannot prevent sound passing through the medium of bone. The ossicula themselves, therefore, are to be considered as secondary agents, designed to enable the impulse of sound, thus transmitted, to act with more

\* This phenomenon, I am informed, is very general among the North American Indians.



correctness and accuracy on the membranes to which they are connected. The membrana tympani, being furnished with a contractile and relaxing power, its use is, I think, analogous with the iris, to the sight, by regulating the intensity of the violent impulses of sound, and increasing the power of the weak. When our attention is directed to a low tone, the membrane is rendered tense; but the opposite state takes place when loud tones are transmitted to the organ. Considering, therefore, the use of the parts severally, which are external to the labyrinth, and the degree of deafness from the want of each separately or conjointly, it will be found, that where the Eustachian tubes are obstructed, the power of hearing will be more diminished than where a part of the membrana tympani is destroyed. And sometimes it will be equal, if not greater, than that which is occasioned by the loss of the whole membrane and ossicula. In every case of this kind, therefore, it will be adviseable to open the tympanum, which may be done in the manner I have directed.

Hence it appears, that provided the rays of sound are conveyed to the membrana fenestræ ovalis, the functions of the organ will be performed with sufficient accuracy, and that this membrane is one of the most essential to hearing; that the functions of the ossicula and membrana tympani are merely accessory, and are principally employed in regulating the transmission of sonorous rays to the necessary parts of the organ, and in protecting those which are more delicate.

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*New method of extracting the Stone from the Bladder, without the formidable operation of cutting. In a Letter from DR. CALVIN CONANT, to the Honourable SAMUEL L. MITCHELL, dated August 14, 1817.*

[From the New-York Medical Repository, for November, 1817.]

HONOURED SIR,

A few months ago I was called to visit a boy of fifteen years of age, who had long been troubled with frequent suppressions

of urine, in consequence of a loose stone, which occasionally fell into, or upon the sphincter of the bladder.

I frequently introduced a small silver catheter, and removed the stone from over the sphincter; and in this way daily evacuated his water, administering soda and other medicines generally used in such cases, without any apparent success. Worn out with daily toil, I at length resolved, if possible, to extract the stone.

For this purpose I furnished myself with a very fine silver wire, about twenty inches long; made elastic, by being frequently drawn through a wire-plate, without being annealed.

I then drilled two holes through the fore end of the catheter, upon the convex part, about one-eighth of an inch asunder, through which I passed the two ends of the wire, bringing them through from the anterior to the posterior part of the catheter.

I soon found, by shoving the wire forward, that a handsome loop was formed, and that by pulling the two ends back the loop would be brought in so close a contact with the end of the catheter as to be no material hindrance to its introduction into the urethra.

Thus prepared, I visited the boy, and determined to extract the stone, provided I could enloop it, and should find it so small as not to endanger a laceration of the urethra in its extraction; to determine which, I had graduated the ends of my wire into spaces of a quarter of an inch each.

Having introduced the catheter, felt out and enlooped the stone, which was done with little difficulty, I examined my scale and found one inch and a quarter of the wire was taken up in surrounding it; I changed its situation and enlooped it anew a number of times, until I found I had enclosed it in such a manner as to occupy the greatest length of loop, which at this time was one inch and seven-eighths. By this I knew I should be able to bring the stone and wire into the urethra, which would not expose it to so great a laceration.

Having drawn my ends of the wire very tight to keep the stone firmly enclosed in the loop, I proceeded, with gentle

but varied motion, to draw it through the urethra, which I was happy enough to effect with but little difficulty, or pain to the subject.

I injected for a few days the cold mucilage of slippery elm (*Ulmus Americana*) into the urethra, causing him to drink of it freely, as well as a solution of soda, and now happily find him in sound health.

I am, Sir, with sentiments of esteem,

Your humble servant.

**CALVIN CONANT.**

To Samuel L. Mitchill, M. D.



## SELECTED REVIEW.

*An Essay on the Chemical History and Medical Treatment of Calculous Disorders.* By ALEXANDER MARCET, M. D. F. R. S. &c. &c. 8vo. pp. 118, and 10 plates. London, 1817.

[From the London Medical Repository, for December, 1817.]

IT is truly gratifying to contemplate the change of opinion which the last twenty years have produced with respect to the importance of Chemical Science as a collateral branch of medical education. It is now generally and minutely studied; and the pathologist willingly admits, that chemistry, in aiding his labours, has, like irrigation, fertilized a soil, which, if hitherto unproductive, was so only from the deficiency of knowledge in the cultivators to draw forth its riches. In no part of medical science, however, has the influence of chemistry been more conspicuously displayed, than in the light it has thrown upon the nature of calculi, and the consequent improvements which have resulted in the treatment of calculous disorders. Hence the great value of every work that can render this species of knowledge more familiar to the practitioner; a fact which must plead our apology for bringing before our readers this volume so immediately after its publication, while many interesting works of a prior date still remain unexamined.

The object of Doctor Marcet's Essay, to employ his own language, "is to describe and illustrate, by means of accurate engravings, the characters by which the different calculi may be distinguished; to indicate the easiest analytical methods by which their chemical nature may be ascertained; and to point out the modes of medical treatment which afford the best prospect of success." In fulfilling these intentions, he has divided his subject into eight chapters; and although each of these may be regarded as in some degree a distinct essay, yet,

by the judicious arrangement he has adopted, every one seems a necessary link in the chain of information, which the whole is calculated to complete.

In the first chapter, which treats "of the different situations in which calculi are found in the urinary passages, and of the symptoms which they respectively produce," our author sets out with assuming the position, that as these concretions occur "independent of any specific agency of the urinary organs themselves," they "are liable to form in any of the cavities to which the urine has access;" but at the same time the particular form of some of these parts, and other circumstances either natural or morbid, facilitate in them the deposition of calculous matter. Thus in the *kidney*, from the peculiar structure of the organ, producing "a kind of double filtration of the urine, which is highly favourable to the deposition of an undissolved calculous matter," concretions are frequently formed. Our author has exemplified this fact by two engravings of kidneys from the collection of Mr. Abernethy; in one of which the pelvis is greatly enlarged and distended with separate calculi closely pressed against each other, and in the other the concretion is a single mass moulded exactly to the form of the cavity, greatly distended, however, with all its ramifications. In both, the texture of the gland is much altered. In cases of this nature, the secretion is carried on by the other kidney; but occasionally, as Dr. Marcet remarks, "both kidneys are diseased to a most remarkable extent, and yet life is preserved for a considerable time." When the kidney is thus distended, the concretions usually extend into the superior part of the *ureters*, expanding it into a kind of pouch, while the coats of the tube below it are considerably thickened. We are rather surprised that our author has not mentioned the total obliteration of the canal of the ureters, which now and then takes place when the pelvis of the kidney is filled with calculous matter, two cases of which have come under our own observation. He notices, however, a circumstance of rare occurrence, that concretions may form in the duct itself; and states that he has seen "an instance in which the internal membrane of the ureters was lined with a calculous concretion."



The situation of calculi in the *bladder* is illustrated by two engravings; in one of which the stone, as in the majority of cases, lies free in the viscus, the coats of which are much thickened and contracted round it; while, in the other, "several calculi are seen enveloped and fixed in distinct cysts or rugæ, formed in the substance of the bladder." He mentions an instance of a single stone being incysted in this manner which weighed 3088 grains; and yet the patient "never had the usual diagnostic symptoms of the stone, namely, sudden stoppage of urine, pain in the glans penis, &c. and he had never consented to be sounded." The stone was found after his death, and consisted of two distinct masses of lithic acid, cemented together "by an intervening layer of crystalline triple phosphate." The manner in which small calculi are occasionally impacted in the urethra, is also illustrated by an engraving from a preparation of Mr. Abernethy. The stone is spheroidal, and the coats of the canal are very much thickened, particularly round the place where it is fixed. The case, adds our author, "is the more instructive, as the stone was first mistaken for a stricture, and an attempt was actually made to destroy it by the caustic." The representation of another preparation, from the collection of the same gentleman, serves to exemplify the formation of calculi in the *prostate gland*, when these were found embedded in its substance; and the manner in which they form a cyst in the lobes is also displayed.

The symptoms attending the presence of calculi in the different situations we have noticed, are next briefly described by Dr. Marcet. Among those diagnostic of stone in the *kidney*, he has overlooked one of the most striking, and which is so much the more necessary to be mentioned, as it is not observed to occur in mere inflammation of the kidneys when no calculus is present. We refer to the dark appearance of the urine, as if it were mixed with coffee grounds, evidently depending on broken-down particles of blood, proceeding from the obscure but continued irritation of the kidney. When this occurs, in conjunction with a dull heavy pain in the loins, there can be very little doubt of the presence of calculus in the kidney. Our author justly remarks, that a decisive diagnostic symptom

of the presence of calculi in the *prostate gland* "is still wanting." He notices a case which came under the observation of Mr. Astley Cooper, "in which this pathological point was clearly decided by manual examination." A sensation of grating at the neck of the bladder was perceived on passing a catheter, "and the finger being introduced into the rectum, some calculi could be felt moving in a cyst within the prostate;" an operation was proposed, but objected to by the patient, who died a few years afterwards, when the prostate was found to contain a number of calculi.

The second chapter, which treats "of the different prevalence of urinary calculi in various districts and hospitals, and of the comparative frequency of the disease in different countries," contains some curious and interesting matter; but we must lament with our author, that this account is much less complete than might have been expected, owing to no regular, or at least ostensible, records, of the cases of lithotomy "being preserved in many hospitals, and particularly in the largest hospitals of London, St. Bartholomew's, St. Thomas's, Guy's, and the London hospital." The only place from which a very accurate statement was procured by him, was the Norwich hospital, in which a regular register of the operations has been kept, and the calculi extracted preserved, for forty-four years. To this collection our author had access, and was furnished with an abstract of the records annexed to the calculi, from the details of which the following table was constructed.

*Returns of the Cases of Lithotomy in the Norfolk and Norwich Hospital, from 1772 to 1816; making a period of 44 years.*

	Number of Operations.			Deaths.		
	Children under 14.	Adults	Total.	Children	Adults	Total.
Males....	227	251	478	12	56	68
Females	8	20	28	1	1	2
	235	271	506	13	57	70

"It appears from the above table, that the mean annual num-



ber of cases of lithotomy in the Norwich Hospital, during the the last forty-four years, has been  $11\frac{1}{4}$ , or 23 in every two years; and that the total number of fatal cases, in the 506 operations, is 70, a proportion of deaths corresponding to 1 in  $7\frac{1}{2}$ , or 4 in 29. It appears also that the proportion of females undergoing the operation, is to that of males as 58 to 1000, or about 1 to 17; and that the mortality from the operation in children is only about 1 in eighteen; while in adults, it is four in 19, that is nearly quadruple."—p. 25.

He has given, also, a tabular view of the comparative prevalence of the disorder, at different periods, in the same hospital, which we do not extract; as the variations of the number of operations of lithotomy in any hospital depend on very different causes, altogether independent of the prevalence of the disease; and, notwithstanding the average proportion of operations of lithotomy in that hospital, corresponding to the total number of patients admitted, is as one in thirty-eight; a proportion greatly exceeding that in any other public institution, to the records of which, Dr. Marcet had access; yet, we think there are scarcely grounds for concluding, that this circumstance can be "traced to any peculiarities in the habits or situation of that district."

In St. Thomas's Hospital, in Cheselden's time, the proportion which the operations of lithotomy held to the total of patients admitted appears to have been nearly as one for every 268 patients; while in the last ten years, according to a statement furnished by Mr. Travers, it has not exceeded one for every 528 patients; but this difference perhaps may be accounted for from the extraordinary reputation of Cheselden in this operation. In St. Bartholomew's Hospital for the last five years, as Mr. Lawrence has endeavoured to ascertain, the annual average has been about "eleven cases of lithotomy, or one case in each [every] 340 patients;" and in Guy's, although the statement is merely guessed at, the average may, perhaps, "be considered as one in about 300 patients." From these data, our author conceives he is authorized in concluding that lithotomy is less frequent in London than formerly; a fact that we think depends less on any change in the diet and habits of the people, than in "the circumstance of calculous



patients not resorting so exclusively, as was formerly the case, to the great London hospitals for the operation." This, in our opinion, arises in some degree from the more general establishment of county hospitals; but also in part from the superior attainments of young surgeons of the present day, enabling them more readily to operate in private.

In the Edinburgh Infirmary, the average of the operations for the last six years has not exceeded two in the year, although the annual number of patients is about 2000; in Paris, in *Hopital de la Charité*, the annual average is from ten to twelve, the admissions being from 2500 to 2600; in *Hopital des Enfants Malades*, where 3000 children under the age of fifteen are annually admitted, the average is about six. In an hospital at *Clermont Ferrand* in France, in which the annual admissions are 2000, the average of stone cases for the last twelve years has been six; and at Rouen, out of 7300 patients "during the last eighteen months, twelve have been operated on." From Vienna no returns were obtained; and very few cases of operation occur there, owing to the prejudice existing against it: at Geneva, in a population of 30,000 souls, lithotomy has been performed thirteen times only in the last twenty years, and seven of the thirteen patients were not strictly Genevese; while at Lyons, which is eighty miles only from Geneva, "the disease is stated to be rather frequent."

The Norwich table might be supposed to confirm the observation, that a considerable number of the cases of calculi occur in children; but our author justly remarks, that "this obtains only among the poor classes;" and even not among these, if they be well fed. In the Foundling Hospital, for instance, into which 1151 children have been admitted within the last twenty-seven years, three cases only have occurred; and in the Military Asylum at Chelsea, 6000 children have furnished one case only of stone.

From these inquiries, Dr. Marcet is led to conclude, that "the tendency to form urinary calculi must arise from some general causes" independent of diet; and keeping in view the fact, that the disease is nearly unknown in tropical climates; and that great changes in the urine are effected by a different

state of the surface, he suggests it as a subject for inquiry, "whether there may not be some essential connexions between the state of the cutaneous functions, and the greater or less prevalence of this class of disorders."

Having concluded these preliminary remarks, our author passes on to the more immediate object of his task, and treats, in the third chapter, of the different species of urinary calculi, of their external characters, and of their chemical nature and classification. He objects to that classification, which has led to the expressions *renal*, *cystic*, or *urethral* calculi, "with a view to indicate that they had their origin in the kidneys, the bladder, or the urethra;" and advances satisfactory proofs, that the varieties of calculi which the urine deposits, are all "liable to appear in the different parts of the urinary passages."

Those found in the *kidney* differ from each other, not only in shape, size, and external appearance, but also in their chemical nature. When not in one mass, assuming the shape of the interior of the organ, the more general figure is round; but in some instances they are of a polygonal form, commonly having three flattened sides.

"These," adds he, "are sometimes of a fawn or yellowish brown colour, sometimes grayish, their surface in either case being often remarkably smooth, as if coated with a fine varnish; or even in some instances having a degree of metallic lustre not unlike burnished copper."—p. 49.

The calculi found in the *bladder* equally "vary" in size, form, and other external qualities. They are spheroidal, egg-shaped, almond-shaped, polygonal with flattened surfaces, and even sometimes almost cubic: "they vary from the size of a few particles of sand agglutinated together, to that of a mass almost filling the bladder." Their colour, which differs, often indicates their chemical nature: thus, when of a fawn or mahogany colour, "they almost always consist of lithic acid;" when white or greyish white, "they always consist of earthy phosphats; when dark brown or black, hard in their texture and tuberculated, they consist of oxalat of lime; and when their surface is uneven, crystalline, and "studded with shining transparent particles," they may be regarded as consisting chiefly of the ammoniaco-magnesian phosphat. In specific



gravity "calculi vary between 1200 and 1900, water being 1000;" and our author observes that, "when sawed through, they exhale a faint animal smell." As it is probable that all natural calculi originate in the kidney, the nucleus is usually lithic acid; but any foreign matters introduced into the bladder, a circumstance which experience has proved may happen, almost invariably become the nuclei of calculi. But calculi are not always homogeneous; and Dr. Marcet correctly remarks, that their alternate layers often present specimens of each of the various species of calculus.

The calculi found in the *prostate gland* seldom exceed the size of a millet seed, are generally more or less rounded, and of a yellowish brown colour. These external qualities of calculi are exemplified in the plates.

Before entering upon the chemical examination of calculi, our author gives a brief history of the discovery of their composition. It is unnecessary for us to follow him in this part of his tract; and we have only to state that Scheele was the first who developed the chemical nature of urinary calculi; and that to the labours of Dr. Wollaston we are most indebted for the knowledge we now possess on that subject. Fourcroy is accused of having assumed Wollaston's discoveries as his own, a charge which undoubtedly requires to be cleared up; and which we trust will arrest the attention of M. Vauquelin, his associate in all his researches into the nature of calculi.

"It is extremely painful," says our author, "to be compelled by justice to notice such an apparent want of fairness and candour in a philosopher, who devoted a long and brilliant career to the advancement of science. But unless this circumstance should hereafter be satisfactorily explained, it will be impossible for posterity to overlook such unjustifiable omission, particularly in a man, whose great fame and peculiar merits as a chemical philosopher, seemed to preclude all temptation to plagiarism."

Our author enumerates the following as the component parts of calculi: "lithic or uric acid; phosphat of lime; ammoniaco-magnesian phosphat; oxalat of lime and cystic oxyd;" and as one or other of these substances generally predominates

In every calculus, although any one of them rarely exists singly, he thus arranges calculi according to their components:

"1. The *Lithic Calculus*.—2. The *Bone-earth Calculus*, principally consisting of phosphat of lime.—3. The *Ammoniaco-Magnesian Phosphat*, or calculus in which this triple salt obviously prevails.—4. The *Fusible Calculus*, consisting of a mixture of the two former.—5. The *Mulberry Calculus*, or oxalat of lime.—6. The *Cystic Calculus*, consisting of the substance called by Dr. Wollaston cystic oxyd.—7. The *Alternating Calculus*, or concretion composed of two or more different species, arranged in alternate layers.—8. The *Compound Calculus*, the ingredients of which are so intimately mixed as not to be separable without chemical analysis.—9. Calculus from the *Prostate Gland*."

As the chemical examination of each of these species is extremely important, we trust a little prolixity in our analysis will be readily excused

1. The *Lithic Calculus*, which is the most prevalent, and the external characters of which we have already noticed, is easily dissolved in the pure fixed alkalis; "from which it may be precipitated in the form of a white powder, by all the other acids." Of the mineral acids, the nitric only dissolves the lithic calculus, the residue, when evaporated to dryness, assuming a remarkably bright pink colour. It is sparingly soluble in lime water; blackens before the blow-pipe, emitting a peculiar smell, "and gradually evaporates, leaving only a small quantity of white ash, which is commonly alkaline." Destructive distillation resolves it into a new and peculiar acid and a variety of other products, which do not essentially illustrate its composition.

2. Dr. Wollaston first ascertained that some calculi consist entirely of *phosphat of lime*; "and described their external characters in the Philosophical Transactions for 1797, which our author has transcribed. When pulverized, this species of calculus dissolves readily in the muriatic or nitric acids. Before the blow-pipe it first blackens, from the charring of its animal matter, then becomes white again, and may be ultimately fused, if the heat be intensely urged; thus differing from the phosphat of bones; which, as it contains a greater proportion of lime,



is not fusible by ordinary means. Dr. Marcet regards this species of calculus as comparatively rare.

3. The *Ammoniaco-Magnesian Phosphat* was first discovered as a constituent of urinary calculi by Dr. Wollaston. It never forms the entire substance of a calculus; but it is often seen "in the form of minute sparkling crystals diffused over the surface or between the interstices of other calculous laminae," which are soluble "in most, if not all, the acids." During the action of the blow-pipe, this phosphat emits an ammoniacal odour, and is imperfectly fused if the heat be strongly urged, "being reduced to the state of phosphat of magnesia." Ammonia is also disengaged during the solution of this triple calculus in the pure alkalies, "the alkali combining with a portion of the phosphoric acid."

4. The *Fusible Calculus*, which is of very common occurrence, was first distinguished by Mr. Tenant, and its chemical characters developed by Dr. Wollaston. In its external appearance it resembles chalk, being white and friable; and often attains a large size, taking a pyriform shape, with a kind of peduncle at the broader end, corresponding to the neck of the bladder; which is well illustrated by a good engraved figure. It is a mixture of the triple phosphat and phosphat of lime; and easily fuses before the blow-pipe. It is this calculus which usually forms around foreign bodies introduced into the bladder; and the concretions that form "when urine is detained in any of the passages, are of the same nature\*." We extract the account of the method of showing its composition.

"If it be pulverized, and acetic acid poured upon it, the triple crystals will be readily dissolved, while the phosphat of lime will scarcely be acted upon; after which the muriatic acid will readily dissolve the latter phosphat, leaving a small residue, consisting of lithic acid, a portion of which is always found mixed with fusible calculus. This portion is generally minute; but sometimes it is more considerable, and in some instances it is so much so as to give to the calculus an equivocal character.

"From the acetic solution the triple crystals may be re-

\* For an analysis of a concretion of this kind, which formed in the vagina of a child, by Mr. A. T. Thomson, vide *Repository*, vol. vii. p. 111.

covered, with their characteristic appearance, by the addition of carbonat of ammonia; and from the muriatic solution, the lime may be precipitated by oxalat of ammonia. As to the phosphoric acid, its presence may easily be rendered obvious, after the separation of the lime, by adding to the remaining liquor a solution of muriat of magnesia, with some carbonat of ammonia, by which means an ammoniaco-magnesian phosphat is immediately precipitated in its usual form\*. The neutral carbonat is better adapted to produce this effect than the sub-carbonat."

5. The *Mulberry Calculus* was first discovered to consist of oxalat of lime, united with some lithic acid and phosphat of lime, by Dr. Wollaston. When finely pulverized, it is soluble in the muriatic and nitric acids, aided by heat: and "when it is digested with alkaline carbonats, the alkali combines with the oxalic acid, and the carbonic acid with the lime." On exposure of this calculus to a red heat, the oxalic acid is volatilized, and the residue is quick lime. But oxalat of lime is also found in some smooth calculi: and Dr. Marcet has met with three varieties of small mulberry calculi, having a distinct crystalline texture, which have been hitherto undescribed.

"They were all of a pale brown colour, and the crystals of which their surface was composed, though at first sight having the appearance of mere square plates, proved, upon closer examination, to be very flat octahedrons."

6. The *Cystic Oxyd* was also discovered by Dr. Wollaston. In external appearance it resembles the triple calculus, but is more compact, is a confusedly crystallized mass, yellowish, semitransparent and glistening; and has been found remarkably free from other ingredients. Before the blow-pipe it emits "a peculiarly fœtid smell; and is so easily acted upon by reagents

\* The presence of phosphoric acid may also be shown by reducing it to the concrete state, by the blow-pipe, on a slip of laminated platina; the acid, when thus urged, communicating to the flame a peculiar green tinge. By processes of this kind, the nature of the component parts of calculi is easily ascertained; but when an exact knowledge of proportions is desired, more elaborate operations are required; some of which are pointed out in Dr. Wollaston's papers in the Philosophical Transactions for 1797 and 1810.



that it is best known by its insolubility in water, alcohol, acetic, tartaric, and uric acids," and neutral carbonat of ammonia. Like other oxyds, it unites with both acids and alkalis; for which reason, and as the specimens Dr. Wollaston examined were taken from the bladder, that celebrated chemist named it *Cystic oxyd*; but our author details two cases in which it was unquestionably of renal origin. He, however, does not propose to change the name.

7. *Compound Calculi in distinct layers* "are composed of different species of calculous depositions disposed in layers around a common nucleus." The plates exhibit various specimens of these; and in particular one, "in which lithic acid may be distinctly seen in the centre, pure phosphat of lime next to this, then oxalat of lime, and ultimately the fusible crust enveloping the whole concretion."

8. *Compound Calculi, with their ingredients intimately mixed.* Dr. Marcet refers to this head all calculi which have no characteristic feature indicative of their belonging to any of the other classes.

9. Dr. Wollaston has ascertained, that all the *Calculi found in the prostate gland* consist of neutral phosphat of lime.

With regard to *urat of ammonia*, arranged by Fourcroy as a species of urinary calculus, our author, in common with Dr. Wollaston and Mr. Brande, has looked for it in vain; although, from analogy, he does not altogether deny its occasional existence in human urinary calculi, having observed it in the urine of the *boa-constrictor*. In the fourth chapter, Dr. Marcet describes two nondescript calculi; one of which he has named *xanthic oxyd*, from its property of forming a lemon-yellow compound when acted upon by nitric acid; and the other, *fibrinous calculus*, on account of its chemical properties corresponding closely with those of fibrine. But as these are as yet solitary instances, he candidly admits, that unless other similar calculi should occur to future inquiries, they "would hardly deserve any farther notice." It is certainly not by the collection of singular cases, and the description of solitary morbid productions, that medical science is to be advanced; but by disseminating an accurate knowledge of those results of disease which are every day occurring.

In the fifth chapter an attempt is made to give some idea of "the comparative frequency of the different species of urinary calculi," by a tabular display of eighteen specimens of the Norwich collection, which our author chemically examined, and that at Guy's Hospital, amounting to eighty-seven specimens. In the first, the lithic calculi constitute one third of the whole; the fusible calculi are next in regard to frequency; the numbers of the fusible and the mulberry are two thirds only of the number of the lithic; and the compound concretions, "one third only of the mulberry species;" yet by far the greatest proportion of deaths has been amongst patients labouring under calculi of the compound or mixed kind. In Guy's collection there is a much smaller proportion of lithic calculi; while "the fusible, the mulberry, and the mixed calculi, bear to each other nearly the same ratio as in the former:" a proof, in the opinion of our author, that the calcareous nature of the Eastern counties of England has no share in the greater prevalence of calculous complaints in these counties; the calcareous calculus being comparatively more frequent in London than in these districts.

The sixth chapter, which is intended chiefly for the use of those who are not very "conversant with chemical manipulations," treats "of the analysis of urinary calculi, with a view to their easy discrimination." Our author first points out the instruments requisite for this purpose, illustrating his description by a sketch; and then details the easiest modes of analysing those calculi which are most prevalent. A *lithic* calculus may be generally known by its external characters; but when these are not distinct, a very small fragment of the calculus, detached by the point of a knife, must be exposed, by means of a small pair of platina tongs or forceps, to the action of the blow-pipe.

"If lithic acid be its principal ingredient, the fragment blackens, emits a smoke, having a strong and characteristic odour, and is gradually consumed, leaving a minute quantity of white ash, which is usually alkaline."

The lithic calculus is also soluble in caustic alkali; and, to ascertain this fact, it is only requisite to scrape off a little of the calculus into a watch glass, pouring on it a few drops of the



alkali, and to hold the glass over the flame of a lamp until the solution be effected: which, however, will generally not be complete, owing to other substances being contained in the calculus. By adding any acid to the solution, a white precipitate is immediately formed, if lithic acid be present. Or, to a particle of the suspected calculus, a drop of nitric acid may be added, and heat applied; if lithic acid be present, it will be dissolved; "and if the solution be evaporated to dryness, the residue assumes a beautiful pink or carmine colour," which is imparted to water, in which this residue is soluble.

A *phosphat of lime* calculus, independently of external characters, may be ascertained, either by exposing a particle of it to the action of the blow-pipe, before which it first blackens and then becomes perfectly white, still retaining its form; or it may be pulverized and dissolved in dilute muriatic acid; from which, "if the excess of acid be not very considerable, the lime may be precipitated in the form of an insoluble compound, by oxalat of ammonia." The *ammoniaco-magnesian phosphat* may be suspected to predominate when a calculus is extremely white and sparkling; but this is rendered certain by the evolution of a pungent ammoniacal odour, on heating a portion of the calculus, or pouring on it a few drops of caustic potash. The property from which it has derived its name enables us readily to distinguish the *fusible calculus*. When melted, it runs into a globule, semi-transparent, and of a pearly appearance. We have already noticed the method of analysing this calculus by chemical means. The *mulberry calculus*, although generally distinguishable by its external aspect, yet is not always so; but, before the blow-pipe it swells out into a white efflorescence, which is caustic lime, and changes the colour of turmeric paper to red. The *cystic oxyd*, besides being recognized by its unstratified structure, waxy appearance, and peculiar odour when heated, is distinguished also by its ready solubility "both in acids and alkalies." The *compound calculus* requires more complex and scientific methods of analysis, unless it be composed of distinct layers, which can be separately examined.

Having finished the description of the means of ascertaining the different species of calculi, our author, before entering upon

the treatment of calculous disorders, makes a digression from his main subject to notice "some other kinds of animal concretions, not belonging to the urinary passages, both in man and other animals." The concretions he notices, are those found in the various viscera, in the salivary glands, and in the intestinal canal of quadrupeds as well as that of man. He mentions having seen a calculus, found in the rectum of an infant with an imperforated anus, which closely resembled the fusible urinary calculus: and some of a caseous nature, that proceeded from "caseous matter actually formed in the intestines, from milk taken as nourishment by the patient, and coagulated by the gastric juices." Some also of a very singular nature are mentioned, in which the nuclei were grains of oats. The concretions found in the intestines of the horse and some other large quadrupeds, are composed almost entirely of the *ammonio-magnesian phosphat*. A large one found in a rhinoceros, and given to our author by Dr. Wollaston, consists of the triple phosphat "disposed in layers round a hazle nut, alternately, with thin laminæ of phosphat of lime." This latter substance, Dr. Marcet has remarked, usually forms part of the composition of the balls of hair sometimes found in the intestines of the cow and ox. The urinary calculi of quadrupeds are composed of the two phosphats and the carbonat of lime, lithic acid never having been detected in them; although it has been found in the droppings of birds, the urine of the camel, and the excrements of the boa-constrictor. *Gouty concretions* are now generally known to be either, to use Dr. Marcet's language, lithats or super-lithats of soda; and *biliary calculi* to consist chiefly of adipocire; but, although it is not noticed by our author, yet we may mention, that carbonat of lime also has been found in biliary concretions, incrusting a nucleus of adipocire, and forming that variety which has been termed *glauco-crustaceous* by Mr. A. T. Thomson, who first observed it.\*

In proceeding to treat "of the chemical and physiological principles to be attended to in the treatment of calculous disorders," the subject of the concluding chapter of the volume, Dr. Marcet first examines briefly the "probable limits of the

\* Vide Medical Repository, vol. iv. p. 467.



powers of medicine" in these affections. He contends, that although little or nothing can be expected from medicine in destroying already-formed calculi, too large to be discharged by the natural passages, yet in some instances, the sharp edges of small calculi or gravel may be so blunted by the internal use of chemical solvents, as to allow them to be passed "with less difficulty or inconvenience;" and that, at all events, the prevalence of the particular diathesis may be altered. Let us examine his exposition of the facts on which these opinions are founded.

In taking a summary view of the practice in calculous disorders, Dr. Marcet properly regards the substances to be acted upon as unorganized bodies, although they are contained in living parts; and considers the chemical treatment to rest upon the following general principles:

"Whenever the lithic secretion predominates, the alkalies are the appropriate remedies; and the acids, particularly the muriatic, are the agents to be resorted to, when the calcareous or magnesian salts prevail in the deposit."—p. 148.

But the question, can acids or alkalies reach the urinary passages? immediately suggests itself. This, our author thinks, experience enables us to answer satisfactorily in the affirmative, as far as concerns the alkalies; but with respect to the acids, the reply is more equivocal; and he is willing to admit, that although both may pass through the circulation unchanged, yet that the quantity is too inconsiderable to make much, if any, impression upon pre-existing calculi. Still, however, the prevailing diathesis may be checked; for even supposing that none can reach the urinary organs, these remedies may produce beneficial changes "during the first stages of assimilation:" for example, by neutralizing excess of acid, or checking an alkaline tendency, "or otherwise disturbing those affinities, which, in the subsequent processes of assimilation and secretion, give rise to calculous affections." When an acid is indicated, "from five to twenty-five drops of the strong muriatic acid, taken two or three times a day, sufficiently diluted with water;" or if an alkali be the remedy required, soda water, or from five to twenty or thirty grains of carbonat of soda, taken two or three times, are recommended by our author. In stating the dose of the soda, he uses the following words: "whether in

the state of subcarbonate or in that of neutral or crystallized carbonate;" but we would suggest, that if the alkali be the useful ingredient, he must know, as a chemist, the difference in the quantity contained in these two compounds; and hence the necessity of prescribing a larger dose, when the carbonate is employed. In our opinion, the dose is too small, in either case, to prove beneficial. Dr. Marcet seems aware, that it may be questioned whether the carbonates can act by their chemical agency, *quo alkali*, in the urine in calculous disorders? He states the affirmative as his opinion, and conceives the carbonic acid itself may be beneficial, by producing "such stimulating effects on the digestive organs, as to counteract, independently of any direct chemical agency, the particular action which gives rise to urinary concretions." It is in this way only, in our opinion, that the neutral carbonates, or soda water, can be useful; for if the alkali combine with the acid in the stomach, which is chiefly the acetic, the acetate formed will more probably pass off by the bowels than be again decomposed, and give the urine alkaline properties. But the alkali, it is said, may be detected in the urine; that, however, we reply, is also the case when magnesia is taken, which is generally admitted to act merely by removing acidity from the digestive organs. Indeed it seems evident to us, that if alkalies can produce any effect in calculous affections, as chemical agents, they must be given in the caustic form, and more largely than the majority of stomachs can bear; but it is much more probable that the benefit which is found to follow from using them, results partly from their neutralizing the superabundant acid in the stomach, and partly from allaying irritation in the coats of the bladder and urinary passages, an effect which our author admits they produce, when they pass unchanged through the kidneys.

Some useful cautions are given regarding the use of magnesia, which our author has seen prove extremely hurtful, in a case in which the gravel deposited by the urine proved, "on examination, to be of the magnesian or fusible kind." We were rather surprised, under this head, to meet with the following sentence from the pen of Dr. Marcet—"the powers of which, magnesia, probably depend partly upon its aperient effect, and partly upon the absorption of redundant acid."



Now we believe it is generally admitted, that *magnesia* is not in itself aperient, and acts only as such when it meets with acid in the *primæ viæ*.

One of the greatest difficulties attending the treatment of calculous disorders, arises, undoubtedly, as our author remarks, from the alternation of calculous deposits; and, consequently, as great attention is requisite to the state of the urine and its sediment, the profession is indebted to him for making public the following remarks of Dr. Prout on this subject:

"When the urine contains urea in abundance, the phosphats generally prevail; while if the urine abounds in colouring and extractive matter, we may conclude that the lithic acid is the prevailing secretion. According to Dr. Prout's observation likewise, although urea and lithic acid do not co-exist in urine in large quantities, when the phosphats are deficient; yet sometimes the three substances, urea, lithic acid, and the phosphats, are found to exist together in abundance."—p. 169.

Dr. Marcet thinks the formation of the mulberry calculus may be checked by the use of the mineral acids, "which have the power of dissolving the oxalat of lime in its nascent state;" but there is an insurmountable difficulty respecting this calculus, as well as the cystic oxyd, the xanthic and the fibrinous calculi, of which he is fully aware; viz. there being "no vestiges of them discoverable in the urine, it is not easy to perceive to what kind of alteration in that secretion it is most desirable to direct the treatment, with a view to correct the calculous diathesis in question." The beneficial effects of purgatives and turpentine combined with opium in expelling calculi, are noticed; but no explanation of the latter hazarded. Some brief observations are offered on the subject of diet; and our author is of opinion, that as in some animals more lithic acid is secreted when they are fed exclusively upon animal food, it may be inferred, "that it might be detrimental to restrain patients affected with this kind of calculus, from taking a due proportion of vegetable nourishment." We would remark, however, that as dyspepsia is a very probable cause of the continuance of the calculous diathesis, if it cannot be said to originate in that morbid state of the digestive functions, whatever can relieve the dyspeptic symptoms, must necessarily tend to diminish the dis-

position to the formation of calculi; and we know no means more likely to effect this than an animal diet and complete restraint from vegetable nutriment. With regard to the direct application of solvents to calculi in the bladder, by injecting into that viscus weak solutions of the solvents, our author's opinion is, that the subject has not "yet been sufficiently investigated." He thinks that benefit may result from the practice when sufficient evidence can be obtained as to the nature of the calculus, but much caution is required on the part of the practitioner, and great patience and perseverance on that of the invalid. In one case in which he employed the muriatic acid, the quantity of the acid, which was at first two drops only in four ounces of water, was gradually increased to twenty-three drops, "without producing any inconvenience; though the solution was often retained in the bladder as long as an hour." The injection, however, besides the acid, contained in solution half a drachm of opium. He properly advises, that the catheter be left in the urethra; and that always before using the injection, the bladder should be emptied as completely as possible.

Upon the whole, we have no doubt, that the profession will regard this volume as an important addition to those works it already possesses, the value of which depends on their practical utility; as it brings the means of investigating a subject, which has hitherto been regarded as requiring a minute knowledge of chemistry, and extreme nicety of manipulation, within the reach of every practitioner; and consequently tending to improve the treatment of calculous complaints. In another point of view, it demonstrates the essential importance of Chemical Science to the medical philosopher; and is in itself an admirable model of the great advantages of simplicity in scientific inquiries.

## ORIGINAL PAPERS.

FOR THE ECLECTIC REPERTORY.

*On the Puerperal Fever of Northumberland.*

BY SAMUEL JACKSON, M. D.

Northumberland, July 22d, 1817.

DEAR SIR,

THE puerperal fever which lately made its appearance among us, having, as we hope, entirely passed over, I will endeavour to fulfil my promise, of giving you a history of it, for the Eclectic Repertory. The cases, though few, may yet be worthy of publication, as they were attended by some peculiar circumstances; and yet I cannot but fear that they will prove an intrusion on the public, since we have an example of silence in many respectable practitioners, who have lately had to contend with this deplorable malady.

## CASE I.

On the 6th of last November, a Mrs. Elliot of this town, a poor labouring woman, was delivered under my care of her ninth child, after an easy and natural labour of two hours. The 8th she took a saline cathartic, which operated comfortably, and she appeared to be entirely well; but on the 9th, the third day of her confinement, she was seized with a chill, which lasted more than an hour, and was succeeded by a fever. I saw her at the end of eight hours, after she had made a fair trial of her own inflammatory diaphoretics.

Her skin was warm and dry, face not flushed, pain in the head severe, tongue uniformly covered with fur, thirst considerable; the abdomen generally swelled, tender and sore to the touch, with severe active pain that had no intermission; pulse 120, full and strong, but not tense; the milk was gone, and the lochia diminished; she had vomited freely, but thrown up only the healthy contents of the stomach. Twelve ounces of highly inflammatory blood were taken, which lowered the pulse, but afforded no present relief; three ounces of salts were directed to be taken at intervals during the night, and the

abdomen fomented with flannels wrung out of hot water. This was at midnight, just three times 24 hours after her delivery.

Next morning the symptoms were much the same, probably rather milder, but the woman was much discouraged, and despair began to appear in her countenance. The pain was severe, she had slept none, and the lochia had now disappeared. The salts had operated freely, bringing away copious, offensive, black stools. About ten ounces of blood were taken and a free purging continued with Glauber's salts. In the afternoon all the symptoms were milder, and I was particularly gratified in finding, that though the abdomen was sore it was not now swelled. Eight or ten ounces of inflammatory blood were let, which lowered the pulse in such a manner as to convince me of what I had been suspecting; that it was a mixed fever, which would not bear very copious depletion. A continual purging was kept up for three days by small and frequent doses of salts; and I had the pleasure at every visit of finding all the symptoms gradually diminish, and the milk and lochia returning on the sixth day. The whole disease went off without running into the typhous form, and without requiring any stimulating medicines, the antiphlogistic regimen being rigidly enforced.

The common brumal fever of this vicinity is the *Synochus* of Dr. Cullen, attended very generally with severe inflammation of the bowels or lungs: to this genus of the great Nosologist I referred the above case, without even giving it the appropriate name of puerperal fever; and this may account for my drawing blood with a timid and sparing hand, having been accustomed to bleed in that mixed disease with the hope of merely moderating, though certainly with a desire of subduing the inflammation.

During the subsequent four weeks I attended six women, all of whom had a good getting up except one, who had a pneumonic inflammation that required several bleedings. But now, when I was going on with, perhaps, too little diffidence of my own abilities, the first patient occurred that I had ever the sorrow of losing in labour or childbed.

#### CASE II.

On the 23d of December, I attended Mrs. Leiseming in her sixth confinement, and had the pleasure of seeing her comfort-



ably put to bed with twins, after an easy labour of three hours. She continued well until the morning of the 25th, about 48 hours after her delivery, when she began to complain of soreness in her limbs, but observed that she had never felt so well in any of her former confinements. The pulse and tongue indicated no tendency to disease. A dose of Glauber's salts was directed, which operated freely.

In the evening I was requested to visit her, and was informed, that about mid day she had a long and severe chill, which was followed by fever, delirium, vomiting and pain in the abdomen. Her skin was warm, face rather paler than natural, headach severe, the abdomen universally tender and sore, with considerable active pain; pulse large, bounding, 130 in the minute, and a little tense; the lochia continued, but the secretion of milk had ceased; the mouth of the womb was patulous and soft, the vagina so hot as to be unpleasant to the hand; her mental faculties were now restored. She was a large, corpulent but infirm woman, and, at two preceding labours, had brought forth diseased children, which afterwards died of mortified extremities.

Twenty-four ounces of blood were taken, which lowered the pulse but did not mitigate the pain; frequent small doses of salts were prescribed with an injection of warm water every hour, fomentations to the abdomen, and barley water for her food and drink.

I now retired slowly to my house considering the disease with the greatest solicitude. Mrs. Elliot's case was plainly reflected in this, but every feature was greatly magnified, and I had no hesitation in considering them both as puerperal fever. I took down every book in my possession that even mentioned the disease; but here I only recognized my former reading, and found nothing but what had been long before digested in my mind. The *Synochus* I knew would bear, in this vicinity, very copious depletion, and I resolved to carry it as far as my frequent experience in this disease would justify; and certainly, further as to quantity, than even Leake or Denman seem to require; the only authors in my possession who recommend bleeding in the puerperal fever. For, though they seem to consider it as purely inflammatory, yet they do not recommend

that copious depletion which an inflammatory complaint, even in London, generally requires. I had carefully studied the work of Dr. Leake, and had seen abstracts of Dr. Gordon's practice; but, finding these authors treated with very little respect by practical writers, I had long before adopted the predominant doctrines, and they seemed to be confirmed by the present cases. In the *Synochus* of this place I had often drawn fifty ounces of blood in the course of the disease; I had afterwards the pleasure of seeing the complaint go off, without assuming the typhoid character: and a few weeks before I had been called to a man, in the twenty-first day of this disease, whose physician had bled him fourteen times, and frequently to fainting, under the opinion that it was a bilious pleurisy, and yet he lived ten days longer, exhibiting a fair contest between the powers of medicine and those of the disease. Presuming then, that our puerperal fever, according to the doctrine of books, was *Typhus* rendered highly inflammatory in its first stage, by the prevailing constitution of the year, I determined to bleed freely and trust to the powers of nature, as I had often done before, to throw off the latent causes, whatever they might be, of the typhoid state; and thus to convert a mixed into a simple fever.

Fortified then with this kind of reasoning, I returned to my patient at the end of four hours, when all the symptoms were found to be aggravated; she was now delirious, and was with difficulty confined to her bed; the salts and injections had operated freely, and brought away copious black stools. The blood was not the least inflammatory, though there had been severe fever and pain for seven hours before it was drawn. Twenty ounces more were taken, which lowered the pulse; the fomentations, salts, and injections continued.

Early next morning, about the seventeenth hour of the disease, she was worse in every respect, except that she was now sensible. A very active purging had been kept up during the whole night, but the abdomen had, notwithstanding, become more tense and sore, and the respiration more laborious. The blood last taken was very inflammatory; but fancying that a typhoid softness was perceived lurking under fulness and apparent strength, my first thoughts of another bleeding were abandoned. The salts and injections were continued, the abdomen

almost covered with blisters, and for her food she was desired to take small portions of sago as often as her stomach would easily receive it. Her strength gradually declined, and her pulse became soft and weak, without any diminution of the fever; till in the evening a vomiting of porraceous matter supervened, which suddenly reduced her in a very alarming manner. I was immediately called, and did not leave her chamber more than a few minutes during the night. Her pulse was full and frequent, but soft and evanescent, like that of a woman exhausted by flooding; face deathly pale, eyes sunk and lifeless, breathing oppressed but not painful, the abdomen easier but prodigiously swelled; tongue white and moist, headach gone, mental faculties not disturbed, strength exhausted, and a dark green fluid streaming from her stomach, in ~~prodigious~~ and almost incredible quantities.

Whatever might be the state of the abdomen it was evident that she could not exist even for a short time without stimulants. Opium, Huxham's tincture, aromatic spirits of ammonia, wine and brandy were given, but nothing afforded the least respite; the debility and vomiting continued, and formed the most distressing scene of sickness I ever witnessed.

In the morning and forenoon of the next day she was a little easier, but in the afternoon the symptoms of the preceding night again returned; the matter which she now threw up was entirely black, and resembled ink; vibices appeared over the whole body; the abdomen was very large, but not painful; a cadaverous stench issued from the bed, and she died the following night, just sixty-six hours after the attack, having enjoyed her senses for the last forty-six. The body went rapidly into putrefaction; the abdomen continued swelled until her interment.

### CASE III.

The next woman that I attended in childbed was Mrs. Gray, of this town, who was safely delivered under my care on the 9th February, after an easy and natural labour of five hours. She continued well for four days, the milk was secreted, and the lochia were in proper quantity. About this time a sharpness of the voice was observed, which gave me some uneasiness: she began to exhibit some slight symptoms of fever and to complain of a ringing in her head. A cathartic of Glauber's salts



was prescribed, and the antiphlogistic diet and regimen, as it had been from the first, very strictly enjoined.

The 6th she was less feverish, and on the 7th appeared to be entirely well except the sharp voice and *tinnitus* of the head. Had I now suspected what was about to follow, the bark or Fowler's solution should have been freely administered; for, on the next day, the eighth of her confinement, she was attacked with a severe chill, which was followed by fever. I saw her soon afterwards, when her skin was hot and dry, cheeks flushed, pulse small, weak and frequent, thirst intolerable, headach and pain in the abdomen much less severe than in the preceding cases.

A very copious purging was kept up during that day and the following night by means of calomel, jalap, castor oil and frequent injections of warm water, and the abdomen was fomented as in the preceding cases. No relief however was obtained; on the next day she sunk into *typhus gravior*, and exhibited in the progress of her disease the following symptoms. Her cheeks were dyed with a yellowish red, making an unpleasant contrast with the rest of her face; when there was no perspiration the skin was very hot; and here, for the first time, in the course of my practice, I distinctly perceived the biting heat, the *mordacitas et acrimonia caloris*. Her pulse became every day more weak and frequent; the alvine evacuations were copious, black, and very offensive; often coming away without the patient's knowledge. Her tongue was at first moist at the edges but dry and red in the middle, and towards the last it became generally covered with dry brown scales. Her vomiting was very frequent; at first green, but towards the last entirely black. She dosed much, was sometimes comatose, slept little, and was always delirious, except after taking a full dose of opium. The abdomen was considerably swelled, was tender to the touch, but was never in active pain. Her breathing was oppressed, and her countenance vacant, and yet distressed. Towards the last, vibices appeared over the whole body, her cold, clammy skin was tinged with yellow, the black matter issued from her mouth without any sensible effort to vomit, an intolerable stench arose from the bed; and in fine, she appeared to be a mass of effervescing putrefaction.

She lived only to the sixth day, and yet it was found



difficult to preserve the body through one night. She died in the very act of vomiting; and the black matter continued to issue from her mouth and nose till the coffin was closed, amounting to many pints: and I was told by persons of veracity, that some parts of the body, and particularly the face, exuded a black unctuous matter, resembling tar; thus almost verifying Lucan's poetical account of those who were bitten by the Lybian serpent:

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manant humeri fortesque lacerti,  
Colla caputque fluunt, calido non ocyùs Austro  
Nix resoluta cadet, nec solem cera sequetur.

The child appeared to be healthy for the first ten days, and then sickened with a fever and died soon after its mother, with small abscesses in various parts of its body, from which the matter might have been discharged by simply puncturing the skin. It did not suck after the mother sickened, but was kept in the same room with her, which was small; and, in contempt of my advice, was intolerably heated with an iron stove.

I have here given a simple statement of what occurred to my own senses, without any desire of exaggeration; nor does the melancholy subject admit of any, being of itself, like the exile of the Roman poet, sufficiently dark and gloomy.

Non hæc ingenio, non hæc componimus arte,  
Materia est propriis ingeniosa malis.

#### CASE IV.

On the 15th of February I attended Mrs. Brautigam with her first child. Her labour lasted sixteen hours, and was very severe, but she was in the end comfortably put to bed about five o'clock in the afternoon. At ten she appeared to be entirely well, except that the pulse was fuller and more frequent than was to be desired: but she had been bled freely during her labour, for an unyielding state of the *os uteri*, and the lochia were now pretty copious; circumstances which inclined me to think that the lancet was not now required. At one o'clock however, just eight hours after delivery, she was taken with a severe chill, which lasted more than an hour, and was followed by all the symptoms of the puerperal fever.

At eight next morning I found her with a skin warm and

dry, face rather pale, countenance distorted with anguish, head-ach severe, the abdomen in excruciating pain but without any sensible tumefaction, yet tender and sore to the touch; the tongue was universally white, thirst importunate, pulse 120, full, strong and perhaps tense; she had vomited, but thrown up only the food which she had recently taken. Twelve ounces of blood were let, which was not in the least inflammatory, and fomentations, salts and cathartic injections prescribed.

At two in the afternoon the symptoms were much the same, the medicine had operated but little, and the pain had not remitted for a single moment. Twelve ounces of blood were again taken, and small, frequent doses of salts prescribed with injections of warm water every hour; fomentations to the abdomen, and tapioca with lemonade for her food and drink.

Ten at night, she was a little easier in the abdomen, but all the other symptoms continued the same; the salts and injections had operated freely: the last blood, like the first, was not inflammatory; nor did it show any sign of disease. Twelve ounces more were taken, which was still not inflammatory. The fomentations were continued, and frequent doses of salts prescribed, with injections of warm water every hour, and more frequently if there should be griping pains.

Next morning she was still worse in every respect. The disease had now lasted thirty-four hours, and she had passed three days and three nights without one minute's sleep. Her pain was more and more severe, and her moaning was heard as we approached the house. The blood already taken was not in the least inflammatory, and at every bleeding the pulse had fallen for a time without affording any sensible relief. I had no hesitation in considering it the anomalous state of disease: six ounces more were therefore taken, when her pulse vanished at the wrist and she became faint. This blood was very inflammatory, being deeply buffed and cupped.

A more judicious nurse was now procured, who carried my instructions fully into effect, and applied the fomentations in such a manner as to be soothing and comfortable, though previously they had been chilling and of mischievous tendency. The purging with salts was continued with injections of warm water every hour. This bland fluid was also injected into the



womb, and my patient freely acknowledged that she was benefited by it. She at last began to experience relief. The stools became black and offensive, and in less than three hours after her last bleeding she was relieved of all pain, and began to sleep. The injections and salts were, however, used so as to procure six or eight stools in the twenty-four hours; her food and drink were tapioca and lemonade, in small and frequent doses.

In this promising state she continued till the sixth day of her disease, when she had a slight chill followed by fever, and some pain in the abdomen. This was evidently, as she said herself, brought on by agitation from the imprudent conversation of a visitor. Three ounces of inflammatory blood were taken, which brought on symptoms of fainting; salts, injections of warm water, and fomentations, were used as before, by which she was again relieved in a very few hours.

The next day, and at the very same hour, she had a severe chill followed by fever and pain in the back only, and afterwards a general moisture, warm and comfortable.

The following day, the eighth of her disease, as the hour of accession approached, thirty drops of laudanum were given her, and warm bricks applied to her back and feet, which appeared to anticipate the chill; for she had, at the precise time, a slight pain in the back, which probably indicated that something worse had been preparing. She was now reduced to such a state of debility as to be almost speechless; her pulse was full, evanescent, 110 in the minute, but her tongue was clean, thirst and pain gone, skin soft and cool, and I was therefore comforted with the hope that she had thrown off all the latent causes of *typhus*, whatever they may be; and that nothing remained to be done but cautiously to restore her strength, and check the tendency of the system to form an intermittent.

She was therefore requested to take twenty grains of bark, and ten drops of the elixir of vitriol every hour, in an ounce of hot water; and, as the time of accession approached, to use laudanum and hot applications as the day before. This plan was successful, and was continued for six or eight days, when the dose of bark was gradually reduced and very small quantities of animal food prescribed. She recovered safely and rapidly, and

a journey to Philadelphia restored her to her former state of robust health.

The child appeared to be healthy and took milk and water; but, about the twentieth hour, it became livid, and died, without any evident cause, before it was a full day old.

#### CASE V.

On the night of the 17th of February I was called to the assistance of Mrs. Harrison, of Sunbury, a small town about two miles distant from Northumberland. She was threatened with abortion, but as the pains did not press down, and the mouth of the womb was not at all dilated, I entertained comfortable hopes of preventing it. She lost blood, and took a pill of opium, which soon quieted the pain. About midnight, however, I was called again, but before I arrived she had been delivered of a dead, putrid child, seven months old. I prescribed for her as for all other puerperal women, quietness, a cool room, and the antiphlogistic regimen. The next day, however, when I entered the room, it was intolerably heated with a close stove, the bed was surrounded with curtains and a crowd of company were taking their tea; she appeared, however, entirely well.

The 19th, at two o'clock, I visited her again, and was informed that, a few hours before, she had been seized with a chill and fever. Her skin was now warm and moist, cheeks flushed, thirst considerable, tongue slightly furred and nearly natural; there was some pain and soreness in the lower part of the abdomen, and pain with swelling in the epigastric region. The pulse was small, soft, 136 in the minute, there was ringing with pain in the head, difficulty of hearing, and a copious flow of milk; the lochia were in proper quantity. She had taken a dose of salts in the morning by my direction, which had not operated; and an officious neighbour had superadded a large dose of senna, which had been likewise ineffectual.

An attempt was made to relieve her by bleeding, purging, enemata, fomentations, and the antiphlogistic regimen; to which afterwards blistering the abdomen was superadded. She was a young woman who had never had children, was a daughter of a former pastor of the congregation, had no regular nurse, and her room was therefore crowded with neighbours whom she



did not suspect of fallibility, and whose mischievous kindness she received with confidence. Whatever inflammation I drew from her veins they amply replaced with brandy, strong soups and the intemperate heat of an iron stove; and under the *apparatus duplex remediorum*, she afforded something like the following symptoms.

The skin was generally warm and dry, face flushed till near the last, countenance vacant and languid, eyes lifeless and sunk, mental faculties very seldom and very little disturbed; a constant difficulty of hearing with ringing and pain in the head, pulse small, soft, frequent, generally about 136 in the minute; tongue moist and nearly clean to the very last, stools black and offensive, stomach not disturbed, pain and swelling of the abdomen very moderate, blood highly inflammatory. About twenty-four hours before she died the pulse became more full and slow, which I suppose was a symptom of suppuration. Tonics were then begun but without avail; she soon became covered with a cold sweat, and died the fifth day of her disease.

I have been particularly grieved with the loss of this patient, as there is reason to believe, from the mildness of all the symptoms, that, had the antiphlogistic regimen been fully carried into effect, the inflammation would have been subdued by a single bleeding, and the system been left strong enough to conflict with the disease in its tendency to *typhus*. This is the only woman who died with any decided symptom of suppuration; and even here there were no chills, nor did the abdomen subside.

#### CASE VI.

On the 23d of February Mrs. Baldy of Sunbury was delivered under my care of her second child, after an easy and natural labour of two hours. She continued well for thirty-two hours after her confinement, when she too was seized with a chill. I was called at an interval of nine hours, and had the sorrow of witnessing another case of this fatal disease. All the symptoms were remarkably violent, and particularly the pain in the epigastric region; the pulse was small, soft, 136 in the minute, blood very inflammatory.

She was bled twice and purged most copiously, but the disease steadily increased; and, notwithstanding the early and long continued discharge of black offensive matter from the bowels, her belly soon began to swell, and on the second day of her disease was as large as before delivery. Blisters were applied to the abdomen, but perhaps they were rather injurious, their effects being altogether inadequate to the rapidity of the disease. Injections of warm water into the womb promised to be very beneficial, by bringing away coagula, and increasing the lochia.

The beginning of the third day she was prostrated into what has been called the typhous stage; and from this forward we entertained no hope of affording relief. The pulse was too small and weak to be counted; cheeks flushed, countenance denoting great anguish and entire despair, abdomen greatly swelled, breathing short and painful, tongue dry and brown, mental faculties not disturbed, porraceous, and afterwards black vomiting almost incessant, livid spots, and towards the last a total privation of sight and finally of hearing, though the mental faculties were still entire. She died the beginning of the sixth day, and yet it was found difficult to preserve her till the funeral rites could be decently prepared. Tonics were given after the third day without affording relief.

The child never sucked, and was taken from the house soon after the mother was seized; but it sickened after a few days and died, apparently of a malignant fever, covered with vibices and small abscesses.

#### CASE VII.

On the 15th of March Mrs. Howe, near this town, was delivered by a midwife at my request, as I was lame in one hand, and therefore unwilling to attend; but the secundines not coming away in due time, I was again called upon to render assistance. This was afforded by the introduction of the forefinger; for the placenta was lying in the vagina; and, upon being moved a little, was soon expelled by the pains. This woman was entirely well the next morning, twenty-four hours after her delivery, and took a dose of salts by my direction, which operated comfortably.



Next day, the 17th, about forty-eight hours after her delivery, I found her labouring under the fatal epidemic. She had been seized the evening before, and, having no regular nurse, she tried to produce a sweat by hot bricks and tea of pennyroyal (*mentha pulegioides*.) The pulse was now 130 in the minute, pretty full and strong; the other symptoms it is not necessary to enumerate. The disease had now lasted sixteen hours, and had, no doubt, been aggravated by injudicious treatment; but yet it was milder in its aspect than in any of the other cases. Twelve ounces of inflammatory blood were taken, salts and cathartic injections given freely, and fomentations applied to the abdomen, by a benevolent neighbour who perfectly understood the operation, and who had applied them with so much efficacy in Mrs. Brautigam's case.

In about six hours she was relieved of all her pain, and began to sleep. No more blood was taken, but her bowels were kept freely open by injections of warm water; the fever gradually disappeared, till in two days there was not a sign of it left. Two women who had volunteered their services to nurse her, in succession, now left her under the care of the family. Every thing was done wrong; when I prescribed injections, which were still thought necessary to keep the body freely open, they gave her, dose upon dose, of salts; they damped her bed with fomentations most unskilfully and unnecessarily applied, without orders or any plausible reason; in consequence of which she had another chill followed by fever. This was considered as a relapse into her former complaint, and an attempt was made to relieve it by injections, purges and fomentations; but in fine, it proved to be a violent inflammation, the character of which I did not detect till it was too late to afford relief. Her pulse towards the last was tense, and continued so till it ceased to beat; the abdomen uniformly swelled; the disease at length reached the pleura, and rendered the breathing most painful and difficult; she had been tending towards a consumption for some time, and had now a severe cough, which aggravated her sufferings. She died on the eighth day, and as I believe, of pure unsuppurated inflammation; retaining all her senses and mental faculties to the last, and anxiously watching the clock for the different approaching hours, which she hoped would put an end to her agony.

This woman, unlike all the rest, showed no symptom of putrefaction after death; her case appeared to be pure inflammation, and no doubt might have been cured by vigorous depletion.

In the commencement of this essay it is mentioned, that I had long before adopted the opinion, that this disease is of a typhoid nature. This opinion led me to bleed sparingly as it regarded the degree of inflammation, and yet copiously, for a mixed fever. I am very certain, that without it, the two women who recovered, would be now in the grave; and that it had no agency in the death of the rest. Authors may make a parade of bark and cordials, but in such cases they can only hasten on the fatal event; the disease of the abdomen presenting an insurmountable barrier to their just operation. I must candidly acknowledge, that they were given in the last stage of my cases, in an humble compliance with authors, rather than with any hope of their affording relief. One of the women that recovered, took not one particle of tonics, nor did the other take any until the disease was gone, and the system was about to form an intermittent. These two patients were frequently, though not copiously, bled, and were purged beyond any thing that I ever attempted in other diseases, without assuming one symptom of *typhus*; as I have often seen our *synochus* do, which had been treated by moderate depletion.

Blisters to the abdomen, I presume, were injurious, being an additional irritation; their effects being altogether inadequate to the violence and rapidity of the disease. The two women who recovered were not blistered.

Warm water injected into the womb was always comfortable to the patient, and promised to be useful, by bringing away the stagnant lochia and increasing the discharge. The fomentations were soothing and comfortable, when properly applied; and in three cases appeared to be the very agents of safety to the women, including Mrs. Howe, who was at one time entirely relieved. In all the other cases, I am afraid, they were injurious, by damping the bed, and therefore checking the perspiration. In one instance, a bladder of water was spread over the abdomen, but the pressure of it could not be borne. I had



found the common fomentations in all diseases a very difficult and precarious remedy, few persons applying them with proper judgment and care. How they should be useful I cannot determine, unless it be by relaxing spasms, and producing a constant stream of perspiration from the diseased part. If this be the mode of their action, how carefully must they be applied, how assiduously repeated,—beyond the intelligence of ordinary nurses!

The profound respect which I have always entertained for the elegant and scientific writings of Denman, strongly inclined me to the use of antimonial powders; but the dreadful vomiting in my first fatal case, together with the opinions of some authors on the subject, inspired a wish to preserve the tone of the stomach; which was endeavoured, by giving the patient frequent doses of sago or tapioca, and warm lemonade. The effervescing draught was not tried, as there were no nurses of skill to administer it.

I have lately received that number of the Eclectic Repository, which contains an analysis of Dr. Hey's work; a number which had been overlooked by the bookseller who supplied me. It appears, that after losing eleven patients, he adopted Dr. Gordon's practice, a practice that has been long neglected, and that he was then almost uniformly successful; and it is there likewise stated, that Dr. Armstrong, of Sunderland, by adopting the same principles, has been equally fortunate. These are most interesting facts in the history of the disease, and they have led me to consider, again and again, whether the same treatment would not have been equally salutary in all our cases. With the exception of Mrs. Grey, who, as I have said, soon sunk into *typhus gravior*, none of my patients died of the true pathognomonics of *typhus*, but of a certain extraordinary depression and disordered state of the vital powers, which, in compliance with authors, I called the typhous stage, and which I believed to be truly typhous, but modified by a severe and extensive inflammation of the abdomen.

Experience has clearly ascertained, that there is a fever, attended with local inflammation, in which we may bleed to the amount of ten or twenty pounds with safety, and often with

advantage; again, there is a fever attended with local inflammation, which will seldom bear the loss of one pound of blood, and will sometimes not bear bleeding at all, without hastening on a train of symptoms which are often fatal, and to which the term typhous has been applied. Now the only question is, to which of these febrile affections does the puerperal fever properly pertain; for the decision of this question must determine and regulate the use of the lancet.

Perhaps it is most reasonable to conclude, that those epidemics which have been so successfully combated with bleeding, were purely inflammatory; and perhaps sometimes rising, like the yellow fever, to the grade of malignancy, producing a defect of action from an excess of force. But in other epidemics, that unknown something, the typhous poison or predisposition, may have interfered. This we know has sometimes happened in the dysentery and yellow fever, adding greatly to their danger and mortality; why should it not sometimes occur in the puerperal fever?

It is perhaps often a difficult matter to distinguish between the *typhus gravior*, and the true malignant fever; nor am I yet satisfied, that all my cases were not inflammatory, and some of them rising to the grade of malignancy; and therefore, that all of them might not have been cured by copious depletion.

I was, last winter, called to a man with an incised wound, and inflammation of the knee joint. He was sitting up in bed with mild delirium, carpologia, false vision, vacant countenance, pulse 160, and so small as hardly to be counted; and in fine, nothing was wanting but the glassy eye to render it, to all appearance, the last stage of a typhous fever. I had read of patients dying in this state; and particularly in one case related by Mr. S. Cooper, in his little work, on Diseases of the Joints. Something vigorous was therefore to be done. Three quarts of blood, taken at two bleedings, in the space of an hour, rendered his pulse fuller and slower, and brought him completely to his senses. The depletion was pursued, but suppuration took place, and the man escaped with a stiff joint.

This man was not sensible of any pain at my first visit, unless when a spasm of the limb touched his almost suffocated sensibility; what then should I have done had the inflammation



been seated internally, if any inflamed internal membrane will render such symptoms? Here was an inflamed membrane involving the whole system in its ruin, and probably producing that very species of morbid action which has been called malignant; and that very depression and disordered state of the animal motions, which so often occur in puerperal fever, and which has there been denominated the typhous stage.

It may here be proper to mention, that during the prevalence of our fever all diseases were severely inflammatory, and particularly the first stage of every *synochus* that occurred to my observation. It has been observed by authors, that the erysipelas has often attended the progress of the epidemic, puerperal fever. It was likewise unusually common with us, and I am sorry to say that it still continues. It has required very copious depletion: the following case may prove an useful specimen.

About the 1st of April I was called to a young man, at the distance of seven miles, who was found labouring under the following symptoms. The face was slightly flushed, skin warm, tongue white in the middle, a constant pain in the epigastric region, aggravated by breathing, no puking nor nausea; pulse 130 in the minute, very small, weak, and vibrating, like a tense cord. I was doubtful concerning the character of the disease; the treatment however, was begun with bleeding, purging, and antimonials.

Next day the symptoms were nearly the same, but the tongue was now dry and brown: the depletion was continued as there was no sign of *typhus* in his countenance. On the third day the region of his stomach was relieved, but all the other symptoms were more unpleasant; and his debility, small, weak pulse, and dry brown tongue, inclined me to suspect a typhous fever. He now informed me that his arm was again getting bad. This arm I had two years before cured of a white swelling. Upon examination it was found covered with erysipelas. The case was now plain; the depletion was continued, notwithstanding the general debility, and particularly weakness of the pulse. He was bled every day for a week, and the disease soon disappeared, leaving him in a very exhausted state. He was now allowed milk, and in a few days a little wine at his own earnest desire; but no sooner had he swallowed the pernicious fluid

than he perceived its evil effects; and in less than four hours the disease appeared on his face, and required three bleedings to subdue it.

This man was bled twelve times; and we see, that for many days after he could not bear the stimulus of a little wine in his panada. But this was not the most violent of our cases; being particularly mentioned on account of the translation of the disease from the abdomen to the arm, and to show what might have been the treatment had this metastasis not taken place.

A healthy robust woman had the disease on her face, with a very soft, small and frequent pulse; coma, and sometimes delirium. She was copiously bled more than twenty times, purged and constantly nauseated with tartar emetic; and yet after her recovery, she could not taste animal food for two months without exciting fever. A healthy man of sixty-five had the disease on his leg, but refusing to be bled, he died a most lingering and painful death of mortification. At this time another patient had the disease likewise on his leg; and, while all were predicting his death, he escaped by the means of my lancet, though eighty-nine years of age, and of a constitution broken by intemperance. The cases however, which have occurred during the summer have been milder, and never required more than two bleedings.

The hooping cough likewise prevailed at this time, and those who had seen the disease before considered it as very severe. It frequently induced dangerous pneumonic inflammation, three cases of which proved fatal. There were two cases of its occurring a second time after a lapse of years; one of which was in my own person.

Having observed that the neighbouring midwives were successful in every instance, and also, being strongly prepossessed with the doctrine of typhus, I was ready to impute their good fortune to their customary copious use of wine and spirits; and the practice of Dr. Wood of Pennsborough, twenty-seven miles up the river, served to strengthen me in this opinion. We had conversed on the subject, and shortly after he too had a fatal case, which he considered as ending in *typhus*: he then gave his puerperal women large quantities of brandy and paregoric elixir, and had the satisfaction of seeing them all do well. My



next patient was therefore allowed a gill of brandy in the twenty-four hours. She was the first that escaped the disease, but she escaped with a subsequent mammary abscess, which I imputed to this Brunonian, and to me most abhorrent practice. My next patient took bark as a prophylactic, and escaped all complaints; but we soon returned to our former antiphlogistic regimen and mode of practice, with the hope that the warm weather had banished the latent cause of this unhappy disease.

I was much disappointed in finding, that nothing is said in the analysis of Mr. Hey's work concerning the contagiousness of the fever in question. This is certainly a subject of immense importance, and the testimony of Mr. Hey, on either side, would carry with it the greatest weight and authority. I am not disposed to discuss this knotty question, which would require a laborious dissertation upon the state of the atmosphere, the predisposition of the system, the nature of contagion; and finally, whether all these are so active and alive to the work of destruction, that the very small portion of *idiomiasmata*, which may be conveyed to the patient by her attendants or visitors, can excite the disease. My observations would enable me to say something on either side of the question, but thus much I can truly say; that, if the contagion was carried to my patients, in a single instance, it must be the most active poison in nature.

Whatever may be the opinion of physicians on this subject, they will probably emerge with a more peaceful conscience from the distresses of an epidemic puerperal fever, by the assurance of having always guarded against every source of infection; and thus, if an error was made, of having certainly erred on the side of safety.

*October 20th, 1817.*

The above account would have been sent to you at the time it is dated, but the very night I was finishing it, and, when I had the most comfortable hopes of the disease having passed over, another of my patients was seized.

#### CASE VIII.

On the 21st of July, Mrs. Jones of Sunbury, was delivered under my care of her third child, after a severe labour of ten

hours. Her pains appeared to press particularly hard upon the lower part of the abdomen, almost detruing it below the bone of the pubes. The child was expelled gradually; the head, shoulders, body and limbs coming by as many successive pains, but the womb remained uncontracted, and the throes continued equally violent, without any intermission; nor did the speedy expulsion of the entire placenta procure any relief. I remained with her an hour, during which time the pains became more moderate, but they were still violent, and the intermissions of them not more than half a minute. The womb was still large and very tender to the touch.

Next day the 22d, twelve hours after delivery, she informed me that the pains had continued without any mitigation, that she had slept none, and that she was worn out with distress and watching. They were plainly after-pains, as she had some short but regular and complete intermissions. The womb was but little contracted, and so tender, that the slightest touch gave exquisite pain. She had now a very slight fever, but no signs of milk; and therefore fearing an inflammation, I drew sixteen ounces of blood, ordered a cathartic injection, two grains of opium to be taken immediately, and nauseating doses of emetic tartar, for the purpose of promoting perspiration, and relaxing the spasms.

The next morning, the 23d, I was made happy by finding her much better; the pains had left her for the most part, and she had slept comfortably most of the preceding night. A cathartic injection was directed.

The 24th she was nearly well, had a copious flow of milk, the abdomen was not sore, the womb had subsided, and there was no symptom of fever. A dose of Glauber's salts was directed.

The 25th she was entirely well. The salts had operated freely; there was no symptom of fever.

The 26th, upon entering her room, I saw her countenance distorted with anguish, and had the horror of witnessing another case of this unhappy disease. The days were very hot, the nights uncomfortably cold and foggy, and particularly so on the bank of the river where my patient resided. She had been entirely well till about midnight, the beginning of the fifth day,

when she felt the want of more bed-clothes; but, being unwilling to disturb the nurse, continued cold and uncomfortable for two hours, and was then taken with a long and severe chill.

The skin was now, eight hours after the attack, warm and dry, cheeks slightly flushed, pulse 140 in the minute, small and soft, headach and abdominal pain more severe than in any of the former cases; tongue slightly furred, thirst considerable, abdomen not swelled, but universally tender and sore; milk nearly gone, lochia present. The nurse had given her a large dose of laudanum and a cathartic injection, but without affording any relief. The pain of the abdomen had not one moment's intermission, and was every hour growing more severe.

Now, in such a case, would any practitioner of good education, and but a moderate portion of good sense, prescribe bark and cordials? certainly not, unless misled by the *insaniens sapientia*, the typhoid doctrine of books. No time was lost in balancing the supposed tendencies of the system to *synocha* and *typhus*. She was bled from a large orifice, and in a sitting posture, in order to induce fainting without drawing an immoderate quantity. When about twenty-five ounces were taken she became relaxed, and puked several times; but she was encouraged to hold out; till at last when thirty ounces were drawn, she fainted and broke into a profuse and general sweat. It had been my design to follow up this treatment with injections and purges; but as the proper indication was to preserve the system in its present state of relaxation as long as possible, it occurred to me that this could be most easily answered by giving a full dose of tartar emetic in divided portions. I was desirous also of profiting by its specific operation, if there might, perchance, be any truth in all that has been said of the self-sufficient efficacy of the Parisian and Manchester remedy. Four grains were then dissolved, and directed to be given in divided doses, until full vomiting should be produced; and it was requested that an injection of warm water should be given every hour, beginning as soon as the emetic should cease to operate.

After visiting some more distant patients I returned at the end of three hours, and was informed that the emetic had operated severely, bringing away much bile; that she had been deadly sick, and in a profuse perspiration from the time I left

her. But I was equally surprised and delighted with the happy effects of my remedies. She had now no active pain, no headach except when disturbed with noise. They had not yet thought proper to give her injections, and the abdomen was still sore and tender. She was requested to sit up in bed till eight ounces of blood were taken, when she again puked and fainted. This last blood was not near as inflammatory as the first. The injections were ordered to be begun without delay; and twenty grains of calomel, and as many of scammony were made into pills, and directed to be taken in divided doses during the next five hours.

At six o'clock I visited her again, and found that she had been purged freely, that the stools were black, and that she had been in a comfortable perspiration since my last visit. She was much better, but the fever was present, and the abdomen was sore to the touch. She was again bled in a sitting posture to the amount of six ounces, when she became faint. The injections were continued.

At ten she was still in a comfortable perspiration; the purging had been kept up by injections, and the abdomen was now compressible without pain. The last blood was inflammatory. The pulse 140 in the minute, very small and soft, tongue foul, thirst inconsiderable. It was now directed that, during the night, she should have an injection only when there might be griping pains; and, that if the skin became dry she should take nauseating doses of tartar emetic. Her drink was barley water, and her food sago.

There was now no danger of her dying of inflammation, but the chilling doctrine of *typhus* was still predominant in my mind; and, at every subsequent visit, I expected a trembling hand and low delirium, with as much anxiety as the uncertain and devious mariner will *hereafter* look for breakers on the African desert. But a gentle perspiration continued, and the whole disease went off without any further medical aid; leaving her surprised physician only the pleasing task of gradually restoring her strength. In three weeks from her first confinement she was able to do her family work.



## CASE IX.

On the 29th of August, I attended Mrs Rocholl with her first child, and saw her comfortably put to bed after a pretty severe but natural labour of twelve hours. Nothing particular occurred for the first six days. She had a copious flow of milk, and took two saline cathartics.

September 3d, I was called, and informed that she was taken with a chill, and that she was now only getting warm. Be this as it might, she was already in a perspiration, her headach severe, pain in the abdomen moderate, pulse 100, full and strong; milk already diminished. I had hoped that the disease would go off with the perspiration which nature had already excited, and therefore contented myself, for the present, with prescribing nauseating doses of tartar emetic, and a cathartic injection.

At the end of three hours I paid my second visit, and found the skin dry and warm, the pain more severe, the abdomen generally sore and tender to the touch; in fine, it was a true but mild case of puerperal fever; and yet had it been left to run on to the end of the seventh, eighth, or ninth hour, as was the case with all the rest, it might have proved equally severe. She was now bled in a sitting posture to fainting, and a dose of tartar emetic was given her in divided doses, until full vomiting was produced.

I saw her again at the end of two hours, and found the pain moderated, but the skin was dry and warm, and the pulse unsubdued. She was now bled again in a sitting posture until she fainted, and another dose of tartar emetic administered. This was followed by injections of warm water, and ten grains of calomel, and as many of scammony, were directed to be taken when her stomach should be sufficiently composed to receive it.

Next morning I found that the emetic had operated freely, that she had been copiously purged, and that she had perspired freely during the whole night. She had taken the cathartic about day light, and it was now beginning to sicken and purge her. There was at this time no active pain, no headach, no thirst, but very little soreness of the abdomen; and in fine, with the aid of some nauseating doses of tartar emetic, the whole disease went gradually off by an easy resolution. At

the first bleeding about sixteen ounces of blood were taken, at the second probably forty. Both portions were highly inflammatory.

In the management of the above cases I did not differ in principle from the treatment of Mr. Hey. The emetics were suggested to me at the bed-side of Mrs. Jones, as the most likely means of continuing that exhaustion of the system, and of the morbid powers; which the nature of the case required, until I could return with the lancet. They answered my views completely; and in the great relaxation of the system, produced by bleeding, they did not pain the abdomen.

Perhaps it is a matter of some importance to bleed the patient in an upright posture, in order that fainting and relaxation may be induced as quickly as possible; and certainly, if there be a typhoid puerperal fever on earth, it must there be a matter of the utmost moment; in order that the local disease may be subdued by a small evacuation, and the system left strong enough to throw off the latent causes of the typhous state. In our fever, I should consider myself as culpably negligent, if the system should be suffered to rise for a single moment. Let the patient be bled to fainting, which checks the disease, and produces at once a tendency to resolution; let this state of things be carefully preserved, even for a short time, and the patient is safe; she escapes a most painful, distressing, and comfortless death; is restored to her family, her friends, and her helpless infant.

And here, I cannot but remark, how necessary it is for remote practitioners to furnish themselves with all the sources of recent information. The safety of my two last patients I most willingly and gratefully attribute to Mr. Hey; or, to speak more correctly, the analysis of his book was the efficient cause under Providence, of saving their lives; and had it not been for the neglect of a bookseller, I should have received it long before; and thus, if my patients were doomed to die, they would not have died from a deficiency of medical science. And here too I cannot but deplore the unhappy scarcity of medical books. Of the catalogue which you kindly put into the hands of my bookseller, not a single copy could be procured in Philadelphia

or New-York; while every press is teeming with the petty novels, plays, and poems of modern taste; and every boarding-school miss can furnish her reticule with the hasty and unprofitable effusions of Byron and Scott.

Now it appears from the history of this malady, as it may be collected from books, that no other mode of practice, except Charles White's and Monsieur Doucet's, has ever proved generally successful; and that most of the typhoid authors have found it a very formidable and fatal disease: and these were the authors that, at first, arrested my attention, and fixed my opinions. Still, however, I ventured to deviate from them, so far as to bleed pretty freely; and in the two first cases that were cured, I felicitated myself upon steering a middle path, between inflammation and *typhus*; thus pursuing the most approved practice of treating the mixed fevers, by endeavouring to obviate symptoms, and trusting to the powers of nature to cure the disease. And this too is the very treatment proposed by Darwin, as a useful modification of the practice of Dr. Gordon. But here the philosopher of Litchfield has proved the futility of theory. His practice, which was also mine, is a mere contestation with symptoms, without striking at the root of the disease; and not unlike the army of Mithridates, fighting the moonlight shadow of the Romans.

From the little that I have read, seen and thought, upon the subject of this disease, I have ventured to deduce the following conclusions: that, in its simple state, it is always an inflammatory fever, sometimes rising to the grade of malignancy, producing depression, prostration, death and putridity, in rapid succession: that *perhaps* the typhous poison sometimes mingles itself with the original disease, producing a mixed and more dangerous fever, nearly allied to the *typhus gravior*: that this is to be ascertained by the constitution of the year, the character of the prevailing epidemic, and the effects of remedies: that two of my fatal cases were merely inflammatory; and three of them inflammatory malignant;—all of which ought to have been treated by copious depletion: that it is at all times a truly idiopathic fever; and may possibly be prevented, in the epidemic seasons, by fresh air, an antibilious cathartic, abstinence

from fermented and spirituous liquors, farinaceous diet, and liberal doses of bark in substance.

I am, your affectionate pupil,  
and obedient humble servant,  
SAMUEL JACKSON.

DR. THOMAS C. JAMES.

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FOR THE ECLECTIC REPERTORY.

*On the Ergot.*

BY JOHN STEARNS, M. D.

Albany, 23d April, 1817.

DEAR SIR,

Your letter of the 9th inst. would have been earlier received and acknowledged, had it been directed to Albany. In reply to your enquiries relative to the ergot, I would observe, that as I have not kept a register of all the cases in which I have prescribed it, I am unable to give you the precise number. They would probably much exceed two hundred. I have been extremely cautious in the use of this remedy, and have reserved it exclusively for those cases in which the natural efforts had entirely ceased, or were totally incompetent to effect the delivery. When thus prescribed, and under circumstances favourable to its exhibition, I have experienced a greater degree of uniformity in its operation, than any in other article of the *Materia Medica*. Great perversion of its use, like all other novel medicines, has produced injurious effects, and consequently excited strong prejudices against it, and subjected it to a censure which it certainly has very ill deserved. But the time is not far distant, when a more perfect knowledge of its virtues, the manifest necessity and general desideratum of such a medicine, will evince to the world its high utility.

To avail ourselves of this benefit, the caution which accompanied its first publication, should be rigidly observed.

But we have every reason to believe, that the quantity has in some instances been improperly increased, and administered at too early stages of labour; or when the muscular fibres were in a state of rigid contraction: the consequences of which would



be a failure of the remedy, or an unnecessary and useless aggravation of distress. It is therefore of the highest importance, to defer the exhibition of the ergot till the labour be considerably advanced, and the os uteri in a state of complete relaxation. If these effects be not spontaneously induced by regularly progressive efforts, copious depletion should be premised. Administered under these circumstances, and the patient otherwise in a favourable condition, my experience has proved, that the ergot will invariably operate with efficacy and success. But although these general directions are necessary for those who are unaccustomed to its use, yet every one's own judgment, grounded upon long experience, will more easily suggest the train of symptoms which indicate the necessity of this remedy; and the success of which a careful observation will always enable them with certainty to predict. In every essential deviation from these rules, practitioners will be grossly disappointed in its operation, and may consequently be induced to consign it to oblivion, as a remedy extremely injurious in its effects, or totally inert; but improved experience will always convince them that its failure was attributable to its premature exhibition, to some preternatural obstruction, or to its being given in cases where the rigidity of the muscular fibres would not yield to the *vis a tergo*. And here I beg leave to remark, that the suggestion which I formerly made, of its tendency to relax the rigid fibres, subsequent experience has not confirmed.

In cases where it has been clearly indicated, I have never witnessed any injurious effects, but have frequently observed less tendency to a subsequent hemorrhage, than where it had not been prescribed. This probably results from the contractile power which the ergot had imparted to the uterus, previous to delivery; and which is subsequently continued till this viscus is reduced, and the bleeding vessels nearly closed. But although these effects are very evident, I have never prescribed it for the sole purpose of suppressing hemorrhage.

In retentions of the placenta its operation is equally successful, but must be given in less doses than in parturition. I have used it in cases of morbid menstruation, without any satisfactory evidence of its efficacy.

It was prescribed in a case of puerperal convulsions, with

astonishing success, by Dr. Waterhouse; which case you may see detailed in a late number of the New England Medical and Surgical Journal, published in Boston. This is a very important fact.

I have, on the whole, no hesitation in pronouncing the Ergot to be a valuable acquisition to the *Materia Medica*; and if confined exclusively to judicious practitioners, and used with due caution, will always be a safe and efficacious remedy. But it is impossible to predict the injuries it may produce in the hands of the rash and unskilful.

I am, very respectfully,  
your obedient servant,  
JOHN STEARNS.

DR. E. MICHENER.

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FOR THE ECLECTIC REPERTORY.

*On the formation of Moveable and Preternatural Cartilages on the Joints.*

Extract of a letter from Lyman Spalding, M. D. to Baron Larrey, M. D. &c.

SIR,

No doubt it will be pleasing to you, to learn that your notions of the formation of moveable and preternatural cartilages of the joints, published in the essay on that subject, in your *Memoirs of Military Surgery*, have been substantiated by dissection.

In that essay you observe, that "physicians who have written on concretions of the joints, are divided in opinion; some suppose that they are formed in some part of the synovial membrane that lines the capsule of the joint; others, that they are formed of the adipose and vascular membrane that lies in the posterior depression, between the condyles of the femur, and are loosened from their attachments by shocks or concussions. Again, there are others who adopt the opinion which is most generally received, viz. that a part of the synovia grows



thick in the most dependent parts of the joints, so as to form these concretions, which afterwards gradually enlarge."

In giving your own opinion of their formation, you say; "The formation of these cartilaginous concretions, is no doubt owing to some particles of the cartilaginous substance, that are crystallized on the surface of the condyles, being detached and conglomerated in the cavity of the joint; or perhaps these crystallized particles are strained through the little vessels that arise from the synovial capsule; and the concretions, thus formed, remain suspended by a *pedicle*, that breaks when they have acquired a certain volume."

During the Session of the College of Physicians and Surgeons of the western district of the state of New York, for the year 1815, one of our subjects for dissection, afforded me an opportunity of proving the correctness of your inductions.

The cartilages of most of the joints, in this subject, were so abraded, as to convince us that the subject, during his life time, had laboured under some severe affection of the joints, perhaps rheumatism; which was rendered probable, from his having been an inhabitant of a northern climate, where rheumatic affections are common. The cartilages of the condyles of the lower jaw, those of the joints of the ankles and wrists were least affected; next to those, the joints of the elbows, shoulders, and knees had suffered most, but the hip joints exhibited the greatest ravages of disease.

Almost the whole of the cartilage was eroded from the head of each thigh bone. The round ligament of the left femur was entirely destroyed; a little fibrous substance marked the place of its origin. The periphery of the heads of the femurs projected very much over the neck, as though they had been pressed upon, while yet in a soft state. This rendered the apparent neck of the femur very short. The capsular ligaments were much thickened.

Within the cavity of the left hip joint was found a cartilaginous concretion of the size and form of a small bean, attached by a fibrous pedicle to the neck of the femur, just under the projecting part of the head. The pedicle was attached to the convex side of the concretion, over which it appeared to spread in form of a membrane, resembling the tunica vaginalis of the testicle. This pedicle was about three quarters of an inch in

length, and appeared to consist of vessels and fibres. In fact, two small threads arose separately and continued the whole course, by the side of the pedicle.

This preparation is now in my possession. The concretion resembles very exactly those found in the joints. Does not this preparation settle the question, and prove incontestably, that the cartilaginous concretions found in the joints, are formed by the vessels, as you conjectured.

Permit me to add; that, while in the service of my country, I saw an infantry soldier, at Fort Constitution, who had a cartilaginous concretion in his knee joint. It was so large as to be distinctly seen and felt; but which, contrary to all other cases, gave him no pain or uneasiness while it was lost within the joint; but as soon as it appeared externally, it produced great uneasiness and even distress; which continued till it was again reduced. This he was enabled to do by a little manipulation. This case was seen by the then Secretary at War, the honourable William Eustis, M. D. and also by Dr. Joseph Goodhue, of the army.

The interesting subject of dissection, before mentioned, presented another peculiarity, which I had never before seen. On opening the abdomen we had a most elegant view of the numerous absorbent vessels, arising from the intestines, and traversing their course through the mesenteric glands, to the thoracic duct. They were rendered apparent by the whiteness of the chyle, which was arrested in its course, and coagulated in the absorbents, by the suddenness of his death; to which the immediate extinction of vital heat might have contributed.\* The absorbents were fully distended with a caseous substance of about the colour of cheese made of skimmed milk. I opened some of these vessels with the point of a lancet, forced out a part of their contents, and endeavoured to inject them with quicksilver, but found it impracticable. This was the most charming view of the abdominal absorbents, which I ever beheld.

*New York, December 1, 1817.*

\* The subject of this memoir was drowned, in the month of December, when there was much ice in the river; and, as appeared from dissection, immediately after having eaten a full meal of bread and milk.



## ORIGINAL REVIEW.

*Vegetable Materia Medica of the United States, or  
Medical Botany. No. II.*

WORKS of this kind have their value much affected by the character of the engravings that are intended to illustrate the subject; we therefore notice with pleasure, the superiority of the present number in point of graphic stile and execution, excellent as the first unquestionably is in these particulars. With the author, we are disposed to join in commendation of the liberal spirit of the publisher, and to extend the mite of praise to the artists, whose talents have contributed so essentially to the embellishment of the work. We likewise congratulate the professor on the success of his undertaking, and cordially sympathize in the feelings excited by the extensive patronage which he has already received from a generous public. We are informed that near four hundred copies have been sold; a very encouraging proof of the estimation in which the work is held.

1. The first article introduced in the number before, us is the *Magnolia Glauca*. Respecting its medicinal properties, we are informed, that the bark of the root possesses an aromatic and bitter taste, readily extracted by ardent spirits and by boiling water. These preparations are frequently employed by the peasantry in the cure of Rheumatism. The bark of the tree and branches, reduced to a powder, constitutes an agreeable aromatic bitter which has been used in intermittents. On these occasions it is given in doses of one drachm, repeated three or four times a day; the decoction is given to the extent that the stomach will bear.

2. The *Liriodendron Tulipifera* or *Poplar*, has been the object of the highest admiration with the botanist, and lover of forest

scenery. It has likewise attracted the attention of the medical practitioner, and has been highly extolled on account of its tonic properties. It is the bark which has been used. In the year 1802, Dr. Rogers published his inaugural dissertation, in which the chemical analysis of this article appears to have been conducted with considerable precision. Dr. Barton acknowledges his obligations to this author, and has introduced copious extracts from the work. As the result of the experiments made by Dr. Rogers, we are informed, that 24 parts of the bark contain,

Of Gum about 11 parts.

Gum-mucous 6

Resin, nearly 1

Fecula, nearly 6.

The muriatic acid, perhaps in combination, some iron and a portion of calcareous earth, were likewise discovered, but in very minute quantities.

The bark of the root is stated to be a very strong bitter, having rather a warm aromatic flavour; and is observed to contain an essential oil in which the latter is supposed to reside. It has long been employed by physicians in the United States as a tonic; and united with the *Cornus Florida* or Dogwood and the *Prinos Verticillatus* or Winter-berry, it has been highly recommended for the cure of Intermittents. It is stated, on the authority of the late Dr. Rush, to be equal to the common bitters of the shops.

3. *Cornus Sericea*, or *Swamp Dogwood*. In medicinal properties this appears to be closely allied to the *Cornus Florida*.

4. *Symplocarpus Fatida*, vulgarly termed *Skunk Cabbage*. This is ranked amongst the antispasmodics. On the authority of Dr. Thacher, we are informed that two tea-spoonfuls of the powdered root, administered in a little spirits and water, have afforded relief in hysteria, when some of the most active remedies had failed. Like other articles, possessing similar sensible properties, it has been recommended as an expectorant, and appears to have acquired considerable reputation in relieving the paroxysms of Asthma. It has likewise been extolled as a remedy in the cure of cutaneous diseases; but here the information is by no means satisfactory.

5. *Symplocarpus Angustispatha*. This variety Dr. Barton discovered in the neighbourhood of this city. As yet he appears to have met with but two specimena. It has not been employed in medicine; and whether it possesses any peculiar virtues, experience alone can determine.

6. *Cassia Marilandica*, or *Wild Senna*. This plant is found very abundantly in New York, and in the States south as far as Carolina. It delights in a low, moist, gravelly, or sandy soil, preferring the borders of rivers, creeks, and smaller streams. It flowers during the months of July and August.

This article is well entitled to a place in the *Materia Medica*, being possessed of strong cathartic properties. It is but little inferior to the Senna of the shops; and, as our author justly observes, considering the latter article is liable to frequent adulteration, we think that the indigenous plant ought to be brought into general use, as a substitute for the imported Senna.

We are informed, that the proper season for collecting this plant, is about the latter end of August, or when the pods are observed to be ripe.



## BIOGRAPHY.

FOR THE ECLECTIC REPERTORY.

*Biographical Notice of Doctor Adam Kuhn.*

BY ONE OF HIS PUPILS.

Ne quid falsi dicere audeat.

THE propensity to eulogize our deceased friends, instead of giving a faithful record of their lives and characters, is so general, and withal so natural a failing, that it is scarcely regarded as such; and the real character is thereby, too often greatly obscured, by the colouring which was meant merely to embellish it. On the present occasion it is intended to say nothing but what is believed to be strictly true; and to those who were fully acquainted with the subject of our notice, we willingly submit the following short, but we trust, candid account of a man, whose life was distinguished by correctness of manners, and uncommon usefulness, in the sphere in which he moved.

Doctor Adam Kuhn was born at Germantown, near Philadelphia, November 17, 1741, old stile. His grandfather, John Christopher Kuhn, and his father, Adam Simon Kuhn, were natives of Furfeld, a small town near Heilbronn, on the Neckar, in the circle of Suabia. They both came to Philadelphia in September, 1733. His father was a man of bright natural parts, improved by the benefits of a liberal education; and was considered as a very skilful, attentive, and successful practitioner of medicine. He was a magistrate of the borough of Lancaster, and an elder of the Lutheran Church; and was the principal, and almost the only person, who was actively concerned for the promotion of classical learning, amongst the youth of that place. For this end he procured the erection of a school-house, in which



the Greek and Latin languages were taught, by the best qualified masters. There was no one, amongst his cotemporaries, who had more at heart the spreading of religion; and there was no place of worship built throughout the country, to which he did not liberally contribute. The utmost pains were bestowed by him, on the education of his numerous offspring, to enable them to become useful members of the community.

Doctor Adam Kuhn's first studies in medicine were directed by his father, until the autumn of 1761; when he sailed for Europe, and arrived at Upsal, by the way of London, in the beginning of January, 1762; having traversed Norway and part of Sweden. He studied medicine and botany under Linnæus, and the other professors of the university of Upsal, until July or August, 1764, when he returned to London; where, it is believed, he remained a twelvemonth.

The particular estimation in which he was held by Linnæus, will be sufficiently manifested by the annexed letters of that eminent man. They will also serve to shew the correctness of his pupil's conduct, and his unremitted attention to his studies.\*

At what time Doctor Kuhn went to Edinburgh cannot be precisely ascertained. He took his degree of Doctor of Medicine, in that University, on the twelfth day of June, 1767. The Thesis published by him on the occasion, *De Lavatione Frigida*, was dedicated to his friend and instructor, Linnæus.

He visited France, Holland and Germany; but whether before, or after his residence at Edinburgh, is not known.

In the month of January, 1768, he returned from London to his native country, and settled in this city; where he quickly rose to an high degree of estimation amongst his elder medical brethren; and soon succeeded to the most respectable practice.

He was appointed professor of *Materia Medica* and Botany, in the college of Philadelphia, in January, 1768; and commenced his first course of Botany in May following.

A society for inoculating the poor, for the small-pox, was instituted at Philadelphia in January, 1774, and Doctor Kuhn

\* These letters, and a nearly literal translation, follow the present notice. It is hoped there are many, who will be gratified by a perusal of them in the original Latin of this celebrated professor.

was chosen one of the physicians. It appears from the bills of mortality for 1773, that of one thousand three hundred and forty-four persons, who died in the City and Liberties during that time, above three hundred perished with the natural small-pox. The labours of the society terminated in the April following, on account of the unsettled state of public affairs. What a happy contrast does the important discovery of vaccination offer to this affecting report!

In May, 1775, Doctor Kuhn was elected one of the Physicians to the Pennsylvania Hospital; which he attended until his resignation in January, 1798; having served the institution, with his usual diligence and faithfulness, upwards of twenty-two years. It may not be improper to add, that his medical prescriptions bore the stamp of energy and simplicity.

The Philadelphia Dispensary, for the medical relief of the poor, the first institution of its kind in the United States, was founded in 1786. Doctor Kuhn was appointed one of the consulting physicians; and ever proved himself to be amongst the foremost of its steady friends and patrons.

The college of physicians of Philadelphia was established in 1787; of which Doctor Kuhn was always an active member. On the decease of Doctor William Shippen, in July, 1808, he succeeded him as president; and was continued, during his life time, in this distinguished station.

In November 1789, he was appointed professor of the theory and practice of medicine in the university of Pennsylvania; and, on the junction of the two medical schools, of the college and university, was chosen professor of the practice of physic, in January, 1792. In 1797, he resigned his medical chair. As a teacher, he was faithful and clear in the description of diseases, and in the mode of applying their appropriate remedies; mostly avoiding theoretical discussions. His lectures were eminently calculated to form useful practitioners in the healing art; to the promotion of which his whole life was devoted. Doctor Kuhn was also a member of the American Philosophical Society.

Of his writings, nothing can be recollected but his Thesis; and a short letter, addressed to Doctor John Coakley Lettson, on the diseases succeeding the transplantation of teeth; which was published in the first volume of the memoirs of the Medical



Society of London. This is not the only instance, in which a dislike to appear before the public, has deprived us of the experience of those, who were best qualified, by their talents and observation, to communicate instruction.

The account of men who have been uncommonly useful, although they may have passed through life without much *éclat*, is nevertheless of great importance, when they can be held up as profitable examples to survivors. Of the subject of the present notice it may truly be said, that in him were united the character of the able and conscientious practitioner. His cotemporary medical brethren will unanimously adjudge him the palm of excellence, as a physician; and his numerous patients will unite in deploring the loss of a friend, whose judgment and attention have not been surpassed.

In his common intercourse with mankind, Doctor Kuhn appeared to be reserved, but this was not his natural disposition. He placed a high value on a real friend, and, in the company of his friends, no man was more affable and communicative. His kind and unassuming behaviour to younger physicians, his manners void of ostentation, and his firmness and decision of conduct, will long be remembered.

But a most prominent feature in his character, was a strict punctuality, and observance of all his engagements. This inestimable virtue can never be too highly inculcated to a physician. The want of it is a deviation from truth, and the consequence of such deficiency is replete with endless inconvenience. It would be difficult, justly to charge him with a voluntary departure from this correct course, in the long period of nearly fifty years' practice. And whilst we admire and applaud the propriety of his conduct, an occasion like the present should not be lost, to endeavour to produce a change in the prevailing manners of our country, with respect to the fulfilment of engagements, by holding up to public view, the practice of an estimable fellow citizen, who always acted like one that regarded punctuality as a sacred duty.

Doctor Kuhn was not remarkable for the powers of imagination; but in sound judgment he greatly excelled. His talent for observation was profound. He was, through life, a studious reader; a lover of music from his youth; remarkably abstemi-

ous and regular in his diet, and neat in his person. During a long and active attention to the duties of his profession, he enjoyed so much health, as to use his carriage only in inclement weather.

He was married in May, 1780, in the island of St. Croix, to Elizabeth, daughter of Isaac Hartman, Esq.; by whom he had two sons, respectable characters, now living in Philadelphia.

For some time before his death, his bodily strength began to fail; which induced him, in the autumn of 1815, to relinquish his practice, to the great regret of the families whom he had attended. It has fallen to the lot of the compiler of the present notice, very frequently to be gratified, with hearing the expressions of regard for his medical abilities, from those who had long known him as a physician, and who continue to lament his loss.

After a confinement to the house of about three weeks, he expired, July 5, 1817, aged seventy-five years; without pain, and fully sensible of his approaching dissolution.

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## LETTERS.

### No. I.

*Viro Illustri D. D. Adam. Sim. Kuhn. S. pl. d.*

CAR. LINNÆUS.

ANTE tres circiter Hebdomadas, accessit ad nos filius tuus, eximiæ spei, et moribus suavissimis imbutus; qui, tam longinquo itinere, salvus et incolumis petiit hanc academiam.

Habebit a me consilia quæcunq; candidissima; paterno affectu eum prosequar, et quidquid ad ejus concurrat opem et fortunam, nullo tempore intermittam, quamdiu meis uti velit consiliis.

Apud nos addiscat Historiam, et diagnosin Morborum, Materiam medicam et Historiam Naturæ, melius et clarius quam facile in ullo loco alio. Et, si vixero, intra triennium, Medicinæ Doctor erit; non tantum nomine, sed et Doctrina.

Si sumat ille quotannis heic, eas pecunias, quas D. Wrangel



reportaret e patria, debet ab eo, manu propria scriptum, privilegium pecunias assumendi obtinere; hac ratione uterq̃ lucretur.

Si occurras D. Bartram, qui ad me literas et plantas misit, quæso eum salutes et dicas, quod inter plantas erat unica vere nova, quæ, caule simplici, alto, foliis setaceis numerosis in caule, et facie, referebat *Asphodelum*; et debet, ad genus quod *Helonias* dicitur, referri.

Pluribus etiam salutem dicas D. Wrangel, cui plurimum debeo ob literas et infuscatam amicitiam.

Cæterum, tranquille degas de filio tuo, et certus esto, quod quamdiu meis uti velit consiliis, erit apud me tam securus ac apud Patrem ipsum.

Vale, et vive diu felix.

Dabam Upsaliæ, 1763, d. 2 Februarii.

No. II.

*Viro Nobilissimo, Dno. Adam. Sim. Kuhn. S. pl. d.*

CAR. V. LINNÉ.

Apud me commendasti Filium tuum, de quo jam certiora pronunciare possum. Habitat hic in domo mihi proximâ, ut queam quotidie ejus familiaritate uti, et mores ac studia intueri. Animo est semper erecto, animaque gaudet omnium candidissima; ideoque omnibus nostratibus acceptus est et gratus.

Indefesso fertur in partes omnes medicinæ studio; nec ullam sinit horam frustra labi. Incipit jamdudum gustare scientiæ delicias. Materiam medicam quotidie apud me avidissime haurit. Historiam, s. semioticen, Morborum egregie et solide addidicit. In Historia Naturali et Re herbaria insignes fecit progressus, nunquam profecto pœnitendos: ita ut quondam, V. D. aliis, quam dum abierat, patriam suam videbit oculis. Anatomica et Physiologica apud alios audivit. Proxima ætate, sub feriis, mecum rus petat, ad prædium meum urbi proximum, quo queat in inceptis quotidie proficere. Miratus sum quod nostalgia nunquam sit correptus: unice doluit quod nullas a Patre optimo habuerit literas. Tu ausus fuisti in peregrinum orbem mittere carissimum filium; dum fata eum restituant, peream si hoc unquam dolebis. Verbo; vivit maxime sobrius et castissimus. Curat attente suam œconomiam; nec ullæ juventutis illecebræ, quæ solent illaqueare adolescentes, eum cepere. Proinde, de filio hoc tuo tibi mihique gratulor; et sanctissime testor, me nunquam novisse quenquam, moribus honestiorem, aut diligentia superiorem hoc tuo; quod mea fide spondeo.

Upsaliæ, 1763, d. 24 Februarii.

No. III.

*Amicissimo suo Dno. Kuhnio, S. pl. d.*

CAR. LINNÉ.

Hodie tuas accipio, Amicissime, et magnopere lætor quod T. O. Deus Te saluum perduxerit in Angliam; spero quod ille idem et Te reddat feliciter Tuis! Lætantur mei meæq, quod Te valere perceperint et per plurimum salutant.

Theologiæ Professor Wallerius, Professor Dahlman, et uxor Dni. Amnel, hac æstate, morbis succubuerunt.

Audivi plurima de illustrissima Dna. Monsonia, quam colo, quam veneror præ omnibus in toto orbe Dominis; devotissima mea ei millies dicas, oro rogoq.

Accepi nuper *Cimicifugam*, *Acteæ* speciem, vivam e Sibiria; quod valde lætatus sum.

Haeco plura nova genera, ex India orientali, nondum descripta; possem et vellem, lubenter, unum ex his consecrare in æternam memoriam suavissimæ Dnæ. Monsoniæ; sed optarem obtinere aliquam pulcherrimam, quam posset habere in suo horto; si illa habeat quandam novi generis ipsa, et eam siccam ad me mitteres, mox videbis me officio functum.

Genera, nova editione, prodire, in quibus tuum genus est definitum. Prodiit, et S. Regina museum; vellem hac duo opuscula Tibi dare, si scirem cui traderem.

Nullus dubito quin D. Solander egregie suas rariores descripserit plantas, cum erat e meis solidissimus Botanicus; ipsum plurimum salutes.

Fata Dni. Forscallei præ reliquis doleo, nec a lacrymis me potui obtemperare; ejus jactura, amisit scientia, pulcherrima, plura quam cogitare sustineo.

Fac ut sciam quo properes, quam petas regionem, quæ pulchra observas; et permane sincerus amicus, uti ego tuus ero. Vale, et vive, mei memor.

Upsaliæ, 1764, d. 8. Octobris.

No. IV.

*Viro Clarissimo Dno. Adam Kuhnio, Amico suo dilectissimo, S.*

CAR. A. LINNÉ, EQU. AUR.

Ex literis intellexi, Te, brevi, eruditionis tuæ primum editurum specimen, de *vi et effectu Aquarum frigidarum in corpus humanum*: hinc non potui, non de hocce opusculo, Tibi animitus gratulari; cum,



quæcunque Tibi fausta et felicia contingant, mihi ipsi tanquam propria reputabo semper. Tua apud nos memoria perennis durat; ab eo enim tempore, quo, e felici tua Pennsylvania, solvisti, Upsaliamq nostram attigisti, Te semper ut filium charissimum prosecutus sum, ob mores tuos antiquos et suavissimos, quibus e peregrinis nullus te superavit; ob diligentiam indefessam, qua nullus ardentior scientias coluit; ob infucatam tuam amicitiam, qua nullus tui par extiterit. Nihil itaque amplius mihi in votis erit, quam quod, brevi, tuis redditus, felicissimus diutissime floreas, et Patriæ tuæ stupendas gazas legas; quo sperare licet me tuis oculis visurum Regionem pulcherrimam, abundantem tot raris Mammalibus, Avibus, Amphibiis, Piscibus, Insectis, &c. quot vix, ac ne vix, Terra alia ulla. Videor enim me videre te exspatiantem in Lucis tuis, inter *Liriodendra*, *Magnolias*, *Annonas*, *Cephalanthos*, *Chionanthos*, *Aceres*, *Quercus*, *Hamameles*, *Xanthoxyla*; inter distinctas *Liquidambaris*, *Lauris*, *Sassafras*, *Cratægis*, *Spiræis*, *Kalmiis*, *Cornoflorida*, *Rhoibus*, *Viburnis*, *Itea*, *Galace*, *Lecheis*, *Clethra*, *Hydrangea*, *Moscheuto*, *Hibisci*, *Smilacibus*, *Bignoniis*; in quibus terra strata et disseminata, *Helianthis*, *Rudbeckiis*, *Solidaginibus*, *Asteribus*, *Eupatoriis*, *Kuhnia* tua, *Hedysaris*, *Hudsonia*, *Asclepiadibus*, *Oenotheris*, *Lobelia cardinali*, *Phlogibus*, *Gentianis*, *Monardis*, *Ellisia*, *Houstonia*, *Mitchella*, *Gaultena*, *Epigea*, *Andromedis*, *Vaccinis*, *Panace*, *Dodecatheo*, *Arethusis*, *Orchidibus*, *Trilliis*, *Liliocanadensi*, *Sanguinaria*, *Podophyllis*, *Hydrastide*, *Saraceniis*, *Eriocali*, &c. dum *Trochili*, motitantes auratas alas, hauriunt Nectara *Chelone*, et *Turdi polyglotti* et *Orphei* resonant millenis concentibus inter turbas vocalium avium e summitatibus arborum. Sed paradisi Tui delicias enumerare, ne dum enarrare, vix sufficeret annus; ultimo, oro; quod, dum redux, oculi pascentur florum tuorum voluptatibus, mei memor vivas!

*Dabam Upsaliæ, 1767. Feb. 20.*

#### No. V.

*Viro Clarissimo Dno. Adam Kuhmio, in Philadelphia Botanices Professori, S. pl. d.*

CAR. A LINNÆ.

Tuas V. A. d. 12, Januarii datas, hodie accepi, et summo cum gaudio percepi, Te professorem Botanices et Materiæ Medicæ in Athenæo Philadelphico constitutum; de quo, ex intimo corde gratulor. Hoc dixi uxori et liberis, qui omnes, de tua hac fortuna, summum mecum percipere gaudium.

Quod jussisti de societatibus exsequar, quam primum ad me literas dederis a patria Tua.

Ad finem, hisce diebus, perduxì systematis naturæ tomum primum, qui continet circiter 90 plagulas; Typum subiit nunc alter tomus, in quo D. D. Hope videbit suam *Hopeam* a D. Garden missam.

*Clavis meus medicinae*, qui prodiit ante annum, forte Tibi pro *Materia Medica* esset utilis; utinam scirem quî ad te perveniret; constat tantum 2 phyliris s. plagulis s. paginis, 32.

D. Walkerum optime novi ex scriptis, inter zoophyta multoties cum allegavi; acutissimum virum etiam atq; etiam oro plurimum salutes.

Vidi equidem oculos sepiæ, et videbis me non negasse huic oculos; tamen etiamnum non convictus, quod sint veri oculi; forte aliquod sensus organum nobis ignotum.

Scripsi, nisi fallor, quod, præterito anno, celebravimus nuptias puellæ Gran Caissæ, s. Wacker Caissæ; illa jam habitat in Huggby; non in tua domo, sed altera; et duxit Anders Ersen, filium rustici ibidem; in ejus nuptiis, in tuam salutem hausimus.

Tota mea familia Te plurimum salutatur, et iterum iterumq; salutant.

Dabam Upsaliæ, 1767, d. 26 Februarii.

Si occurras Ampliss. Hope, pro me ab eo exora aliquot semina Americana; nonnulla e prioribus, ab ejus magnificentia missis, germinarunt et excreverunt. D. Bæckman, Germanus, qui successit in locum et Cameram tuam, atque apud me hæsit per annum cum dimidio, jam etiam professor constitutus est Histor: naturalis Goettingæ.

D. König, antea meus, præterito anno rediit ex Islandia; cum plurimis novis in scientia naturali.

Dum proxime scribas, titulum Epistolæ, Societati Regiæ Scientiarum Upsaliæ: ipse enim omnes literas aperio, adeoq; sine involoquio s. convert.

#### No. VI.

*Amico suo integerrimo, D. D. Adam Kuhn, Profess. Botanic. Philad.*

*S. pl. d.*

CAR. LINNÆ.

Cum opportuna detur occasio literas ad Te mittendi per juvenem Theologum nostratem, qui felicissimam adit Pennsylvaniam ves-



tram, nequeo non hinc Te plurimum salutare, et eum, vere Doctum apud Te commendare.

Plurimum Tibi debeo pro actis *societatis vestrae*, quodq; me, numero sodalium vestratum, adnumerare voluisti. Hæc indicia manifesta fuere affectus Tui calidissimi in me, quem semper magis faciam.

Frater tuus jam degit Upsaliæ, et apud me ter tantum fuit; et, ut facie, ita et moribus candidissimis, Tui simillimus.

Mitto cum hisce, *Mantissam* meam alteram, quam forte non dum vidistin.

Utinam dares orbi dissertationem de *Asteribus* vestratibus, quos habetis numerosissimos; et in iis crueres notas specificas sufficientes, cum hoc genus nobis Europæis est difficillimum.

Ad accessum hujus nostratis Theologi, alius a vobis ad nos accedat. Oro itaq; obtestor, quod cum eo mittas aliquot plantas siccas et aliquot semina, inter quæ avidissime expeto semina *Kuhnia*, quæ in horto nostro periit.

Habeo jam duos discipulos ad *Cap. Bon. Spec. D. Tunberg* et *Sparrmann*; qui diligenter plantas legunt; horum *Tunberg*, post annum, cum legatione Belgica adibit Japoniam.

Tota mea familia Te valere jubet; et ego, dum vixero, Tuus et Ter vale.

Upsaliæ, 1772, d. 20 Novembr.

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## TRANSLATIONS.

### No. I.

Upsal, 2d February, 1782.

MR. ADAM S. KUHN,

SIR,

About three weeks ago, your son, of great promise, and endowed with most engaging manners, arrived here; who, after so long a voyage, has reached this Academy in safety and good health.

He will receive from me the most disinterested advice; I will cherish him with paternal affection, and will at no time omit any thing that can contribute to his assistance or advancement, as long as he may chuse to avail himself of my counsels.

At this Academy he can learn the History and Diagnosis of diseases, *Materia Medica* and Natural History, better and more than

roughly than perhaps in any other place. And if I should live for three years more, he will be a Doctor of Medicine, not only in name, but also in knowledge.

If he is to expend yearly in this place, the same sum which Mr. Wrangel is to bring back from his country, he ought to obtain from him a written order, under his own hand, of taking up money; in this manner both will be benefited.

If you should meet Mr. Bartram, who wrote to me and sent me some plants, I beg you to make my respects to him, and tell him, that amongst the plants there was only one that was really new; which, with a high single stalk, with numerous setaceous leaves on the stalk, resembled in appearance the daffodil, and should be classed with the genus *Helonias*.

Remember me affectionately to Mr. Wrangel, to whom I am under great obligations for his letter and his undissembled friendship.

And now, you may live at ease as it respects your son; and remain assured, that as long as he is disposed to take my advice, he will be as safe with me as with his own father.

Farewell, and may you live long, and prosperously.

No. II.

Upsal, 24th February, 1763.

MR. ADAM S. KUHN,

SIR,

You recommended yourson to my care, concerning whom I am now able to speak with more certainty. He lives in a house next door to me, so that I can daily enjoy his conversation, and inspect his morals and studies. His mind is always aspiring, and his very amiable disposition gives general satisfaction; so that he is beloved and esteemed by us all.

He is unwearied in his studies in every branch of medicine; nor does he suffer a single hour to pass by, unimproved. He long since began to taste the sweets of science. He daily and faithfully studies *Materia Medica* with me. He has learnt the symptomatic history of diseases, in an accurate and solid manner. In Natural History and Botany, he has made remarkable progress; such indeed as he will never repent; so that, God willing, he will hereafter see his country with different eyes, than when he left it. He has studied Anatomy and Physiology with other Professors. Next summer, during the vacation, he can go to the country, to a farm of mine,

very near the city, where he may make daily progress in the studies he has commenced. I have been surprised that he has never been afflicted with home-sickness; the only thing that has caused him uneasiness, was not receiving any letters from the best of fathers. You have ventured to send your beloved son to a foreign country; should it be his fate to return to you, I will engage that you will never repent what you have done. In a word; he lives in the most temperate and correct manner. He observes good order in the management of his affairs; nor have any of the allurements of youth, which are apt to ensnare young men, made an impression on him. Therefore, I congratulate both you and myself on this your son; and I declare, most sacredly, that I have never known any one more correct in deportment or superior in application.

For the truth of this I pledge my honour.

No. III.

Upsal, 8th October, 1764.

MR. KUHN,

MY DEAR FRIEND,

I this day received your letter, and rejoice exceedingly that the All Gracious God has conducted you in safety to England; and I hope that He also will grant you a safe return to your friends.

My whole family was extremely glad to learn that you were well, and desire to be affectionately remembered to you.

Wallerius the Professor of Theology, Professor Dahlman, and the wife of Mr. Amnel, have died, this summer.

I have heard a great deal of the excellent Mrs. Monson, whom I esteem and honour more than any other woman in the world; I pray and beseech you to make my most devoted respects to her.

I lately received from Siberia, a live *Cimicifuga*, a species of *actea*, which gave me infinite pleasure.

I have many new *genera* from the East Indies, not yet described; I could, and willingly would, consecrate one of them to the perpetual memory of the engaging 'Mrs. Monson; but for that purpose I would wish to procure the most beautiful plant in her garden. If she has any of a new genus, and you will send it to me, dried, you will quickly find that I have fulfilled my intention.

A new edition of the *genera* has appeared, in which your genus is described; the Museum of the queen's society has also been published. I could wish to send you these two small works, if I knew to whom to intrust them.



I have not the smallest doubt that Dr. Solander has admirably described his scarce plants, as he was one of the most solid Botanists amongst my pupils: I beg you to give my best respects to him.

I lament, beyond measure, the untimely end of Mr. Forscallius; and it was not in my power to refrain from tears. In his death the best interests of science have sustained a greater loss than I can bear to think of.

Continue to inform me of your movements; let me know what countries you visit, and what you meet with worthy of observation; and remain my stedfast friend, as I shall ever remain yours.

Farewell, continue to remember me.

No. IV.

Upsal, February 20, 1767.

MR. ADAM KUHN,

MY DEAR FRIEND,

I have learnt from your letter, that you are about to produce the first proof of your acquirements, in an essay, *On the power and efficacy of the Cold Bath on the Human body*; I therefore cannot refrain from heartily congratulating you on this little work, since I shall ever regard what occurs favourable and fortunately for you, in the same light as if it had happened to myself; for, from the period in which, having set sail from the shores of your favoured Pennsylvania, you reached our city of Upsal, I have ever cherished you as a beloved son, for your correct and engaging deportment, in which none of the foreigners excelled you; for your unwearied ardor and application in cultivating the sciences, in which you were surpassed by no one; for your undisguised friendship, in which none could have equalled you. Nothing will be more ardently desired by me than that, being speedily restored to your friends, you may long prosperously flourish and collect the wonderful treasures of your country; where I may hope to see, with your eyes, a most beautiful region, abounding with as many rare Mammalia, Birds, Amphibia, Fishes, Insects, &c.\* as perhaps any other country in the world. For I seem to myself to behold you wandering in your native woods, amongst Liriodendrons, &c.\* interspersed with Liquidambers, &c.\* amongst which the ground is strewed and covered with Helianthus, &c.\* while the Humming Birds, shaking their

\* It was not thought necessary to repeat all these particulars in the translation: they will be found in the original.



golden wings, sip the nectar of the Chelone, and the different kinds of Mocking Birds, join in a thousand melodious notes, amongst hosts of winged songsters, from the tops of the trees. But a year would scarcely suffice to enumerate, much less to describe the enjoyments of your paradise. Finally I beg, that when on your return, your eyes are feasting on the delights of your flowers, you may still remember me.

No. V.

Upsal, 26th February, 1767.

MR. ADAM KUHN,

MY DEAR FRIEND,

I this day received your letter dated 12th of January, and observed with the greatest pleasure, that you have been appointed Professor of Botany, and Materia Medica in the College of Philadelphia; on which I most cordially congratulate you.\*

I mentioned this circumstance to my wife and children, and they all participate the great joy, which your good fortune has occasioned me.

I shall attend to your request respecting the societies, as soon as you write to me from your own country.

Within these few days, I have brought to a conclusion, the first volume of the *Systema Naturæ*, which contains about ninety sheets; a second volume is now in the press, in which Mr. Hope will see his *Hopea* sent to me by Mr. Garden.

My *Clavis Medicinæ*, which was published upwards of a year ago, might possibly be of service to you in the *Materia Medica*; I wish I knew how it could reach you; it consists of two sheets only, containing thirty-two pages.

I am well acquainted with Mr. Walker from his writings, and have frequently quoted him when treating on the zoophytes. He is a most ingenious man, and I beg you to make my respects to him.

I have indeed seen the eyes of the cuttle-fish, and you will find that I have not denied their existence; but still I am not convinced that they are really eyes; perhaps some organ of sense, to us unknown.

I wrote, if I mistake not, that we last year, celebrated the nuptials of Miss Gran Caissa. She now resides at Huggby; not in your house, but in the adjoining one. She married Andrew Ersen,

\* There must be some mistake here; Doctor Kuhn was appointed Professor of *Materia Medica* and Botany in January, 1768.

the son of a farmer at that place. At her wedding we drank to your health.

My whole family desires to be most affectionately remembered to you.

If you should meet the celebrated Hope, beg from him some American seeds for me; many of those formerly sent, through his kindness, germinated and sprouted.

Mr. Bäckman, who succeeded to your place and chamber, and remained with me a year and a half, has already been appointed Professor of Natural History, at Göttingen.

Mr. Konig, a former pupil of mine, returned last year from Iceland, with many new things in natural science.

When you next write, address your letter to the Royal Society of Sciences, Upsal; for I open all the letters myself; therefore there is no occasion for a cover.

No. VI.

Upsal, 20th November, 1772.

MR. ADAM KUHN.

MY DEAR FRIEND,

As a good opportunity offers of sending a letter to you by a young clergyman\* of ours, who is going to your favoured Pennsylvania, I cannot let it pass without writing, to pay my respects to you, and to recommend him to you, as a truly learned man.

I am very much obliged to you for the transactions of your society,† and for having admitted me into the number of your members. This is evidently owing to your warm attachment to me, which I shall ever highly value.

Your brother now resides at Upsal. He has been with me but three times. He resembles you extremely, both in his appearance and engaging manners.‡

I send with this, my second Mantissa, which perhaps you have not yet seen.

I wish you would give to the world a dissertation on the *Asteres* of your country, which are very numerous; and that you would mark

\* Doctor Nicholas Collin, the present pastor of the Swedish Church at Philadelphia.

† The American Philosophical Society.

‡ Daniel Kuhn, appointed pastor of the Swedish Church at Christiana, near Wilmington, Delaware; who died at London, without returning to his native country.

accurately their specific characters, as this genus is extremely difficult to us Europeans.

On the arrival of this clergyman of ours, another may possibly come to us from you; in that case, I pray and intreat you, to send me some dried plants and some seeds; amongst which I most ardently wish for the seeds of the *Kuhnia*, which perished in our garden.

I have at present two pupils at the Cape of Good Hope, Messrs. Tunberg and Sparmann; who are assiduously engaged in collecting plants. Next year, Tunberg will go to Japan, with the Dutch Legation.

My whole family unites in wishes for your welfare.

I am yours, whilst I live. Farewell.



## MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

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*Extract of a Letter from a Physician, at Florence, to his Friend in Philadelphia, dated October 12, 1817; on the state of Medical Science in Italy.*

MY DEAR SIR,

PERMIT me to give a brief sketch of the principal medical schools, and a slight notice of the leading professors; imperfect 'tis true, but given with the hope that it may not be displeasing to you. Pavia, Bologna, and Pisa, are the three most celebrated cities of the day, for medical instruction. The ancient fame of the first, is supported by the genius and exertions of Scarpa, aided by his fellow professors Borda, Buccellati, and Racchetti; the last is teacher of Pathological Institutes. The very extensive collection of morbid subjects, showing every stage of disease with its corresponding effects, enables this last branch of medicine to be taught with peculiar advantage.

Bologna may vie with Pavia, in the antiquity and celebrity of her university; which could, at one time, boast of twelve thousand scholars, in all the branches of science; but, in common with all other similar establishments in Italy, declined very much; and at present, the number of young men who attend does not exceed five hundred. The names of Malpighi and Galvani, are however, of themselves, sufficient to entitle her to our respect, nor do the zeal and talents of her sons suffer any diminution; for at this moment she can boast of having one of the first physicians of Italy, in the person of *Tommasini*, professor of the Institutes and Practice. He has contributed much by his labours to improve our science, and is now one of the leaders in bringing about a reform of it. He has written on the Yellow Fever, on Diathesis, Inflammation, &c. His coadjutors are, in Anatomy, *Mondini*, and in Midwifery, *Terminini*; also *Rubini*, who has written on Irritation. I had heard much of the



anatomical, and other preparations at Bologna, and was accordingly induced to visit it; but must avow my disappointment on the occasion. There is, it is true, one room set apart for the purpose; in which are represented, all the different states of the gravid uterus, with the presentations natural and unnatural, during labour, together with various monstrosities of fetuses, having double organs, or being deficient in some. Bologna is the chief school of medicine in the Roman states, and far exceeds the ancient capital itself, in the successful cultivation of this branch of science.

Pisa ranks as the first school in Tuscany; but in place of the thousands that used formerly to crowd her halls, she is now attended but by some hundreds. The man of the greatest talents with her, now, is a Doctor *Francesco Vaccà Berlinghieri*, better known by the second name *Vaccà*. As physician and surgeon, he stands the foremost in the dukedom; he has written a work on *Physiology; Remarks on the principal diseases of the human body; Meditations on Man in a state of disease*, and on the doctrine of Brown.

Neither Rome nor Naples deserve particular notice on the score of their medical establishments, exclusive of the hospitals; which are both large and numerous.

To the names already mentioned, we may add those of *Palloni* of Leghorn, who has written on the Yellow Fever, *Brera* and *Boradioli* of Padua, *Testa* (dead) on organic action and reaction, *Botto* on cerebral commotion, *Franceschi* of Lucca, whose work on *Baths* is much esteemed, *Giannini* on the nature of Fever; this is said to be a work of great merit; *Femina* on nervous and petechial fever, *Scavini* and *Carraveri* of Turin, *Guani* of Genoa, &c. I have been the more minute in detailing the names of these men and their works, from their having had great influence, directly or indirectly, in furnishing proofs in favour of the new *Italian Doctrine*, as it is called here, in the support and promulgation of which, *Rasori* of Genoa, *Tommasini*, *Borda* and *Mantovana*, have taken the most active part; the first is regarded as the founder of the theory.

It is now time to say a few words on this city (Florence). Since the death of *Mascagni* there seems to exist a degree of interregnum here, as no one of equal celebrity has yet supplied

his place. The present professor of anatomy, is Doctor *Ucelli*; of surgery, *Guintini*; of the institutes and practice, *Chiarugi*. The facilities of study here are very great, there being two large hospitals, that of *St. Maria Novella* and of *St. Bonifacio*; either capable of containing some thousand patients, kept in the best order, and attended daily by three surgeons and the same number of physicians. Connected with the first, is another institution, called hospital of the Innocents, where those children deserted by their parents are taken in, fed and clothed. In *St. Maria*, the course of lectures, in the various branches of medicine, is given for five or six months, commencing in November. The professors are paid by government, and the young men have liberty to attend them *gratis*; twenty-five constantly reside in the hospital, and have rooms and boarding allowed them. *St. Bonifacio* is the military hospital, and also the one appointed for the reception of those suffering under mental diseases.

I have not been unmindful of your wishes, that I should enquire into the mode of making preparations of the absorbent system, but have not been able to obtain satisfactory information, and the season is rather early yet for dissections. I have seen here the skin of the whole body, which had been taken off and afterwards stuffed, so as to preserve its original form. The spine and muscles of the trunk, and the viscera, are removed by making an incision all the way down the back, and then dissecting back the skin. To take out the muscles, &c. of the extremities, an incision is made on the inside of these parts. The superficial veins, on many occasions, are shown in this way, but I have seen none of the absorbents precisely as you have them; for the external skin when dry, would, it appears, prevent the display of the superficial absorbents. After the external skin is taken off, and the mercury introduced into the lymphatics of the surface, the cellular membrane, dried, might present the appearance which your preparations do now. As respects the other vessels, they are displayed as accurately, and neatly, with us, as here. Should any additional opportunities occur, of my seeing the absorbents prepared, I shall certainly avail myself of them, and inform you of the result.

But what constitutes the boast of Florence, in an anatomical point of view, is the *Physical Cabinet*, or Royal Museum of

Natural History. There are in it fourteen large rooms, filled with preparations of all the parts of the human body, in wax; and executed in such an admirable manner, that many spectators are deceived, believing them real. In one room is represented all the bones, in others the muscles, layer after layer, from the abdominal down to the most minute ones of the glottis. Then come the joints; then the bloodvessels; the various viscera in every possible point of view; innumerable models of the organs of sight, hearing, &c.; every ramification of the nervous and absorbent systems. In other rooms again, are all the organs of generation, male and female, with representations of the different stages of gestation, and of labour; fœtal growth, circulation, &c. What gives these preparations in wax a decided superiority over the dried ones, is, that the former represent every part in the most natural manner, and presenting precisely the same appearance as would be exhibited by recent dissection. Over each case or preparation, is a plate of the parts, and the names of those concerned given. Here may the student pass whole days, aye months, with instruction and pleasure, and even the professor could not but consider his time well spent, in devoting a few hours, to the contemplation of the objects here presented.

In a gallery, and other 16 rooms, there is a most extensive collection of Natural History, of Mineralogy, and the scarcest plants and flowers, represented in wax, so as to present the appearance of perpetual bloom. This museum is open, gratis, to the public every day, from eight o'clock in the morning until one. Guards are constantly in attendance, to keep every thing in order.

The Abbe *Fontana*, now dead, was the superintendent, and under whom most of the preparations in wax were executed, by *Sossini*, also dead. One of the best dissectors and preparers of subjects as models, was *Bonicoli*. The present superintendent, is *Contebardi*, and the labourers in wax, are the *Calenzoli*, father and son. I have had some little conversation with them, on the time, &c. taken up in completing the collection in the cabinet; *Calenzoli*, the father, who was the coadjutor of *Sosini*, says, that it took them thirty-five years, before all was finished. At this time he is attached to the cabinet, for the purpose of repairing what may be broken, or of making additions.



*On the preservation of Grapes: by Dr. John Redman Coxe.*

On the second of October, 1817, I carefully cut off a very fine bunch, and placed it in an earthen jar, covering it completely with dry white sand, and put it away to be opened on Christmas day. On the twenty-ninth of the same month, another of the few remaining bunches was cut off, and put away in a similar manner, and was intended to be taken out on the first of February. On Christmas day, about twelve weeks from the time I gathered the first bunch, it was taken from the jar, as firm, and as fresh as when first deposited.—The other was forgotten until the twenty-second of February, when it was found quite as sound and perfect as when pulled.—From its having been left so much longer than the first, it was, when taken from the vine, rather shrivelled; but this had not increased from its long confinement of nearly three months;—as to its taste and excellence, it was equal to any before eaten, and infinitely superior to those, which, at so much expense and trouble, are brought to us, from Spain and Portugal.—*American Daily Advertiser, of March 7, 1818.*

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*National Pharmacopæia.*

The Medical Society of the state of New York, have issued a circular letter to their medical brethren, throughout the United States, on the subject of forming an American Pharmacopæia.

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*Vaccination.*

Extract from the statement of the proceedings of the Philadelphia Vaccine Society, published by the managers, February 6, 1818.

“It is now nine years since the society was established; at that period violent prejudices existed against vaccination; with great numbers, those were so strong, that they rejected it when offered at their doors.—The members of the Vaccine Society, arranging themselves into district committees, laboured personally, and with much perseverance, to overcome this oppo-



sition; their exertions were in a great degree successful; the prejudices gradually lessened, till they have now almost disappeared.

"In 1809, the first year of its establishment, the society vaccinated, successfully, one thousand one hundred and two persons; and nearly ten thousand, in the seven succeeding years. As the Corporation provided, by law, in 1816, for the vaccination of the city poor, our operations are now restricted to the Northern Liberties and Southwark; in which districts our physicians vaccinated 834 persons during the last year. The whole number of successful cases reported to the society, is, *eleven thousand four hundred and sixty-seven*.

"It is true, that under the blessing of Divine Providence, the ravages of the small-pox are now greatly diminished; yet, within the two last years, *one hundred and forty-eight of our fellow citizens have fallen victims to this pestilence*. It is now spreading throughout a large section of the country; and we are fully persuaded, that vaccination is the only effectual barrier which can be raised against it.

"The managers therefore trust, that the members of the society, and the public, will continue to patronize this institution; which has, for its sole object, the preservation of our fellow creatures, from a loathsome and dangerous disease."

The managers of the Philadelphia Vaccine Society, have undertaken to furnish the vaccine infection, gratis; practitioners may be constantly supplied, by calling at the drug and medicinal store of *Daniel B. Smith*, No. 33, Market Street.

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#### *Proposed cure for Canine Madness.*

New Orleans, Jan. 16.

*Mayorality of New Orleans.*—Mr. Chabert, a physician from the university of Montpellier, lately arrived in this city, has just made known to me a remedy for the canine madness, which has been pointed out as a specific by the Italian physicians.

The remedy was published in the Piedmontese Gazette of the 8th of May last, from which it was literally copied, by Mr. Chabert himself, before his leaving France. The discovery of it is due to professor Brugnatelli, and it would be the more ad-

vantageous, to try by experiments, the confidence which it may be entitled to, that the use of the remedy can occasion no dangerous consequences.—I therefore consider it my duty, to make it known to my fellow citizens, by publishing the following, as it has been transmitted to me.

“Thanks to the celebrated professor Brugnatelli an efficacious remedy, has at last been discovered, against canine madness, perhaps the most horrid of all diseases. That remedy consists in hydrochloric acid (muriatic ox: aqueux) used as well inside of the body, as on the exterior parts of it. The wound produced by the bite of mad animals, must be washed with it. It appears that that substance destroys the hydrophobic poison, even when used several days after a bite. A number of well authenticated cures, operated by that simple means, in the great hospitals of Lombardy, do not permit to doubt the powers of that precious remedy.”

New Orleans, January 15, 1818.

AUG. MACARTY, *Mayor*.

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DIED, on the 22d of January, 1818, in the fifty-eighth year of his age, *Caspar Wistar*, M.D. Professor of Anatomy in the University of Pennsylvania, President of the American Philosophical Society, President of the Pennsylvania Society for promoting the abolition of Slavery, &c. &c. and one of the Censors of the College of Physicians of Philadelphia.

A discourse, entitled, a *Tribute* to the Memory of Doctor Wistar, was delivered, in the Hall of the College of Physicians and Surgeons, at New-York, on the 26th day of January, 1818, by Doctor David Hosack.

An Eulogium on Doctor Wistar, was delivered before the Members of the Philadelphia Medical Society, in this city, February 21, 1818, by Doctor Charles Caldwell.

An Eulogium on Doctor Wistar, was also delivered, by William Tilghman, Chief Justice of the State of Pennsylvania, March 11, 1818, before the American Philosophical Society.



*Transactions of the American Philosophical Society, held at Philadelphia, for Promoting Useful Knowledge, Vol. I. New Series, 1818.*

This important Volume contains, amongst other things, the following valuable papers:

1. On the Geology of the United States; by W. Maclure.—
2. Astronomical Observations; by Andrew Ellicot.—
3. Longitude of the Capitol at Washington; by William Lambert.—
4. Investigation of the Figure of the Earth; and of Gravity in different Latitudes; by Robert Adrain.—
5. On Leadén Cartridges; by W. Jones.—
6. Heights of Mountains in New York, New Hampshire and Vermont; by Captain Partridge.—
7. On the Aborigines of America; by H. H. Brackenridge.—
8. On Platinum, Palladium, and Rhodium; by Jos. Cloud.—
9. An attempt to ascertain the fusing temperature of Metals; by Jos. Cloud.—
10. Inquiry why Metals in a solid state, appear lighter than when in fusion; by Jos. Cloud.—
11. Observations on the Formation of Kentucky; by M. Correa de Serra.—
12. Solution of a Problem in Arithmetic; by James Austin.—
13. Geological formation of the Natural Bridge in Virginia; by F. W. Gilmor.—
14. Analysis of the Blue Iron Earth of New Jersey; by Thomas Cooper, M. D.—
15. On Vanishing Fractions; by J. Mansfield.—
16. Pyrometrical Experiments; by F. R. Haslar.—
17. English Phonology; by P. S. Du Ponceau.—
18. On Fossil Remains; by the Rev. H. Steinhauer.—
19. Extirpation of a large Wen; by J. S. Dorsey, M. D.—
20. Improvement on Leslie's differential Thermometer; by E. De Butts, M. D.—
21. A New Rolling Draw-Gate; by N. Sellers.—
22. Indian Fort near Lexington, Kentucky; by C. W. Short, M. D.—
23. An improved Piston for Steam Engines; by P. A. Browne.—
24. On Bleaching; by Thomas Cooper, M. D.—
25. Appendage to a reflecting Sector; by R. Patterson.—
26. Instrument for setting up Sun Dials; by R. Patterson.—
27. Observations on the Climate in the neighbourhood of the Delaware; by the Reverend Nicholas Collin.—
28. On the mean Diameter of the Earth; by Robert Adrain.—
29. Improvement on the Ship Pump; by Robert Patterson.—
30. On the processes of the Ethmoid Bone; by C. Wistar, M. D.—
31. On two heads found in the Big Bone

Lick; by C. Wistar, M. D.—32. Case of Respiration by means of one side only of the Thorax; by C. Wistar, M. D.—33. On Chondropterygious Fishes; by C. A. Le Sueur.—34. Investigation of a theorem proposed by Dr. Rittenhouse; by Owen Nulty.—35. Monograph of American Insects of genus *Cicindela*; by Thomas Say.—36. Substitute for a Ship's Pump; by R. Patterson.—With other miscellaneous articles.

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*The Second Part of the Philosophical Transactions of the Royal Society of London, for 1817, has just been published, and contains the following papers:*

13. Description of a thermometrical Barometer for measuring Altitudes. By the Rev. Francis John Hyde Wollaston, B.D. F.R.S.—14. Observations on the Analogy which subsists between the Calculus of Functions and other Branches of Analysis. By Charles Babbage, Esq. M.A.F.R.S.—15. Of the Construction of Logarithmic Tables. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—16. Two general Propositions in the Method of Differences. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—17. Note respecting the Demonstration of the binomial Theorem inserted in the last Volume of the Philosophical Transactions. By Thomas Knight, Esq. Communicated by Taylor Combe, Esq. Sec. R.S.—18. On the Passage of the Ovum from the Ovarium to the Uterus in Women. By Sir Everard Home, Bart. V.P.R.S.—19. Some further Observations on the Use of *Colchicum autumnale* in Gout. By Sir Everard Home, Bart. V.P.R.S.—20. Upon the Extent of the Expansion and Contraction of Timber, in different Directions, relative to the Position of the Medulla of the Tree. By Thomas Andrew Knight, Esq. F.R.S. in a letter addressed to the Right Hon. Sir Joseph Banks, Bart. G.C.B. P.R.S.—21. Observations on the Temperature of the Ocean and Atmosphere, and on the Density of Sea-water, made during a Voyage to Ceylon. In a Letter to Sir Humphrey Davy, LL.D.F.R.S. By John Davy, M.D.F.R.S.—22. Observations on the Genus *Ocythoë* of Ra-



finesque, with a Description of a new Species. By William Elford Leach, M.D.F.R.S.—23. The distinguishing Characters between the Ova of the Sepia, and those of the Vermes testaceæ, that live in Water, explained. By Sir Everard Home, Bart. V.P.R.S.—24. Astronomical Observations and Experiments, tending to investigate the local Arrangement of the celestial Bodies in Space, and to determine the Extent and Condition of the Milky Way. By Sir William Herschell, Knt. Guelp. LL.D. F.R.S.—25. Some Account of the Nests of the Java Swallow, and of the Glands that secrete the Mucus of which they are composed. By Sir Everard Home, Bart. V.P.R.S.—26. Observations on the *Hirudo complanata*, and *Hirudo stagnalis*, now formed into a distinct Genus under the Name *Glossopora*. By Dr. Johnson, of Bristol. Communicated by Sir Everard Home, Bart. V.P.R.S.—27. Observations on the Gastric Glands of the Human Stomach, and the Contraction which takes place in that Viscus. By Sir Everard Home, Bart. V.P.R.S.—28. On the Parallax of the fixed Stars. By John Pond, Esq. Astronomer Royal.

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Dr. Crichton has just published, An Account of some Experiments, made with the Vapour of Boiling Tar, in the Cure of Pulmonary Consumption.

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Mr. Abernethy has just published, his Third Course of Lectures, at the London College of Surgeons, on Mr. Hunter's Theory of Life, and on his Museum. It appears, that many of the most important discoveries, assumed by recent physiologists, have been plagiarized from that celebrated surgeon.

## UNIVERSITY OF PENNSYLVANIA.

At a public Commencement held on the 10th of April, 1818, the Degree of DOCTOR IN MEDICINE was conferred on the following gentlemen, who submitted the Theses, annexed to their respective names.

## MASSACHUSETTS.

Edwards Holbrook, On Cystirrhœa.

## NEW-YORK.

William F. Seaman, On Heat.

## NEW JERSEY.

John Y. Clark, Colchicum Autumnale.  
George H. Burgin, Modus Operandi of Medicines.  
Lorenzo F. Fisler, Dysentery.

## PENNSYLVANIA.

Jacob Dewees,	Effects of Labour and Exercise.
Ezra Michener,	Secale Cornutum.
David Hutchinson,	Phthisis Pulmonalis.
Richard Harlan,	Vital Principle,
James S. Rich,	Perspiration.
John Carothers,	Calomel in the Diseases of Children.
David M. Kirkpatrick,	Amenorrhœa.
Hugh Campbell,	Erysipelas.
Hugh L. Hodge,	Digestion.
George B. Wood,	Dyspepsia.
Benjamin H. Coates,	Blisters.
J. Rhea Barton,	Certain Injuries of the Bones of Children.
David Francis Condie,	Digestive Process.
Thomas Vanvalzah,	Dysentery.
John R. Peckworth,	Cantharides as a Remedy in Amenorrhœa.
Thomas B. Cobean,	Hepatitis.
Ferdinand Strein,	Cholera Infantum.
Ellis Lewis,	Hepatitis.
John M'Culley,	Insanity and Hydrocephalus.
David Gallaher,	Chorea Sancti Viti.
James P. Scott,	Croup.

## DELAWARE.

John Johnson,  
Thomas J. Boyd,

Modus Operandi of Medicines.  
Chorea Sancti Viti.

## MARYLAND.

Richard Randall,  
David Craufurd,  
James Dixon,

Diurnal Revolution of the Pulse.  
Gastric Rheumatism.  
Rheumatism.

## VIRGINIA.

Yelverton Bolling,  
Nathaniel M. Miller,  
Pitman C. Spencer,  
Ryland Randolph,  
James Cornick,  
Patrick H. Foster,  
Thomas Marlow,  
Hector Harris,  
Joseph B. Anderson,  
Benjamin A. Jones,  
William J. Holcombe,  
William P. Mosely,  
David Hobbs,  
Edward T. Broadnax,  
James T. Royall,  
Theophilus F. Gillian,  
Walter R. Johnston,  
John Woods,  
William D. Coles,  
John Blair Morton,  
James Horace Lacy,  
Anthony W. Smith,  
Nathaniel M. Osborne,  
Edwin Pegrain,  
John H. Mason,  
James Brown Wallace,  
Samuel Webb,  
William H. Wharton,  
Fendall Gregory,  
John M. Patton,  
Charles Beale,  
William T. Minor,  
John Du Val,  
William P. Graham,

Phthisis Pulmonalis.  
Diurnal Revolution of the Pulse.  
Nitric and Nitro Muratic Acids.  
Connection of the Stomach, &c.  
Vaccination.  
Dysentery.  
Rheumatism.  
Rhus Procumbens.  
Winter Epidemic of Virginia.  
Mammary Abscess.  
Excretion and Retention.  
Medicinal Properties of Charcoal.  
Winter Epidemic.  
Modus Operandi of Cathartics.  
Euphorbia Ipecacuanha.  
Hydrocephalus Internus.  
Ascites.  
Dropsy.  
Conversion of Diseases.  
Peripneumonia Typhoides.  
Dysentery.  
Dyspepsia.  
Menorrhagia.  
Epilepsy.  
Secale Cornutum.  
Sub-nitrate of Bismuth.  
Intermittent Fever.  
Vis Medicatrix Naturæ.  
Jaundice.  
Animal Life.  
Dysentery.  
Rheumatism.  
Fractures.  
On the Structure and Functions  
of the Skin.  
Hepatitis.  
Pulse.  
Ophthalmia.  
Cynanche Trachealis.

Thomas W. Jones,  
Francis G. Taylor,  
John F. W. Merritt,  
Samuel V. Watkins,

**NORTH CAROLINA.**

John T. Clanton,	Typhus Pneumonia.
Isaac Butler,	Hydrothorax.
Lewis M. Jiggilts,	Amenorrhœa.
John H. Atkinson,	Winter Epidemic, &c.

**SOUTH CAROLINA.**

Thomas Broughton,	Spiders' Web.
Joseph M. Dill,	Dyspepsia.
Thomas Legare, Jun.	Late Yellow Fever in Charleston.
James Ramsay,	Tetanus.
Alfred Brevard,	Winter Epidemic in South Carolina.
William B. Whitaker,	Scrofula.
John D. Magill,	Pertussis.

**GEORGIA.**

Thomas G. Janes,	Arthritis.
Richard M. Berrien,	Mania a potu.

**KENTUCKY.**

Benjamin Tompkins,	Influence of Spring, &c.
George Walker Call,	Menstruation.
William A. McDowell,	Suspended Animation.

**MISSISSIPPI.**

William Dunbar,	Hydrocele.
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**LOUISIANA.**

Robert H. Sibley.	Dysentery.
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The Honorary Degree of M.D. was conferred on **COLEMAN ROGERS**, adjunct Professor of Anatomy in the University of Transylvania, (Lexington, Kentucky.)



*Abstract of the Bills of Mortality for the Town of Boston, from the first day of January 1817, to the first of January 1818; from the Record of the Health Office.*

Deaths in each Month.	Males.	Females.	Totals.	AGES.			
January, - -	32	39	71	Under 1 Year			155
February, - -	43	24	67	From 1 to 2			137
March, - - -	36	35	71	2 to 5			64
April, - - -	29	38	67	5 to 10			32
May, - - -	31	31	62	10 to 20			41
June, - - -	30	30	60	20 to 30			78
July, - - -	38	26	64	30 to 40			99
August, - - -	82	69	151	40 to 50			120
September, - -	54	44	98	50 to 60			63
October, - - -	41	58	99	60 to 70			48
November, - -	31	19	50	70 to 80			43
December, - -	22	25	47	80 to 90			23
				90 to 100			3
				100 to 110			1
Totals,	769	458	907	Total,			907

*The above mentioned Deaths were caused by the following Diseases and Casualties, viz.*

Abscess, - - -	3	— Puerperal, - -	3
Angina Pectoris, - -	2	— Typhus, - -	57
Apoplexy, - - -	17	— Rheumatic, - -	7
Cancer, - - -	11	Jaundice, - - -	3
Casualty, - - -	7	Infantile Diseases, - -	157
Cholera Morbus, - -	6	Mortification, - - -	9
Cholera Infantum, - -	2	Old Age, - - -	50
Consumption, - - -	231	Palsy, - - -	6
Convulsions, - - -	1	Quinsey, - - -	6
Cynanche Trachealis, -	1	Phrenitis, - - -	6
Cramp, - - -	3	Stone or Gravel, - -	3
Croup, - - -	11	Scalds and Burns, - -	9
Dyspepsy, - - -	12	Spasms, - - -	3
Drowned, - - -	13	Still-Born, - - -	33
Dysentery, - - -	23	Suddenly, - - -	13
Fits, - - -	35	Suicide, - - -	3
Hanged, - - -	1	Intoxication, - - -	3
Hæmorrhage, - -	3	Rickets, - - -	1
Hooping Cough, - -	19	Tetanus, - - -	1
Fever, Inflammatory, -	2	Unknown, - - -	32
— Bilious - - -	12		
— Pleurisy, - - -	4	Total,	907
— Pulmonic, - - -	47		

N. B. In the year preceding there were 904 deaths, including the deaths in the Alms-House, and in the Hospital at Rainsford's Island. During the year ending 31st December, 1817, there were 5 deaths on Rainsford's Island, and 173 deaths in the Alms-House.

*Published by order of the Board of Health,*

JAMES ROBINSON, Sec'y.

Boston, February 2, 1818.

*Annual Report of Deaths in the City and County of New York, during the year 1817. Containing the Sexes, Ages and Diseases of the deceased Persons.*

<i>Deaths in each Month.</i>	<i>Total.</i>	<i>AGES.</i>			
January, - - - - -	214	Under 1	Year		599
February, - - - - -	213	From 1	to 2		208
March, - - - - -	188	2	to 5		142
April, - - - - -	186	5	to 10		88
May, - - - - -	209	10	to 20		146
June, - - - - -	184	20	to 30		313
July, - - - - -	215	30	to 40		314
August, - - - - -	250	40	to 50		268
September, - - - - -	256	50	to 60		178
October, - - - - -	222	60	to 70		110
November, - - - - -	195	70	to 80		96
December, - - - - -	195	80	to 90		51
		90	to 100		13
		100	to 110		1
Total,	2527	Total,			
		2527			

*The above mentioned Deaths were caused by the following Diseases and Casualties, viz.*

Abscess, - - - - -	13	Cholera Morbus, - - -	34
Aneurism, - - - - -	2	Colic, - - - - -	6
Apoplexy, - - - - -	46	Compression of the	} 1
Asphyxia, - - - - -	2	Brain,	
Asthma, - - - - -	13	Consumption, - - -	574
Burned or Scalded, - - -	15	Convulsions, - - -	176
Cancer, - - - - -	9	Cramp in the Stomach,	4
Caries, - - - - -	1	Diarrhœa, - - -	47
Casualties, - - - - -	12	Drinking Cold Water, -	2
Catarrh, - - - - -	7	Dropsy, - - -	78
Childbed, - - - - -	19	— in the Chest, - - -	22

Dropsey in the Head	87	Locked-Jaw,	3
Drowned,	38	Lumbar Abscess,	1
Dysentery,	71	Manslaughter	1
Epilepsy,	3	Marasmus	30
Erysipelas,	4	Measles,	20
Fever,	12	Menorrhagia,	1
— Bilious,	4	Mortification,	19
— Hectic,	3	Nervous Disease,	10
— Inflammatory,	7	Old Age,	96
— Intermittent,	10	Palsy,	29
— Puerperal,	1	Peripneumonia,	12
— Putrid,	1	Pleurisy,	27
— Remittent,	23	Pneum. Typhoides,	7
— Scarlet,	3	Quinsey,	2
— Typhus,	162	Rheumatism,	4
— Malignant,	1	Rickets,	2
Flux, Infantile	11	Rupture,	1
Fracture,	1	St. Anthony's fire,	2
Frozen,	3	Schirrus of the Liver,	3
Gout,	5	Scrofula, or King's evil	14
Gravel,	2	SMALL-POX,	14
Hemorrhage,	12	Sore Throat,	1
Hæmoptysis,	6	Spasms,	8
Herpes,	2	Sprue,	20
Hives, or Croup,	60	Still-Born,	118
Hysteria,	2	Stone,	1
Jaundice,	10	Strangury,	1
Infanticide,	3	Sudden Death,	8
Inflammation of the Bladder	3	Suicide,	15
— Bowels	54	Syphilis,	7
— Brain,	18	Tabes Mesenterica,	39
— Chest,	91	Teething,	23
— Liver,	41	Vomiting Blood,	1
— Stomach,	7	Ulcers,	5
Influenza,	1	Unknown,	30
Insanity,	11	Whooping Cough,	11
Intemperance,	40	Worms,	29
Killed or Murdered,	9		
Leprosy	1	Total,	2527

Of these there were—

Men,	763
Boys,	673
	<hr/> 1436
Women,	607
Girls,	484
	<hr/> 1091
Total,	<hr/> 2527

## REMARKS.

The City Inspector respectfully reports to the Board, a statement of deaths in the City and County of New York, for the year 1817, amounting to two thousand five hundred and twenty-seven.

"In 1816, the number of deaths exceeded that of the last year by two hundred and twelve. The small pox in the former year was very fatal, having carried off one hundred and seventy-nine persons, whereas in the latter, fourteen only died of that complaint. This circumstance may account for the present decrease in deaths. It is to be lamented, however, that this fatal complaint has again visited our city; and if the exertions now employed fail in checking its fearful progress, it is to be apprehended, that the next year's report will present a melancholy picture of deaths, which might have been avoided, but for the persevering obstinacy of many who reject Vaccination.

"The Consumptive Cases, as usual, occupy a considerable space in the list of deaths, not, however, in a greater proportion than was formerly presented; the same causes continue to produce the same effects, in this widely extended complaint.

"It is a matter of great consolation, that our City has been exempted from that dreadful complaint, the Yellow Fever;—that, whilst other cities on the continent experienced its destructive visitation, we, under the precautionary measures of a vigilant Board of Health, aided by a superintending Providence, have escaped its ruthless devastation.

"It may not be improper to remark, that although the number of deaths were fewer the last year than in 1816, yet more persons died of Old Age than in the preceding year: ninety-six persons quietly departed, among whom was a woman born in this city, at the advanced age of 103; a proof, if any were wanting, that this climate is as friendly to longevity as any other, and that to imprudence alone it is attributable that we have not many such instances to record."

GEORGE CUMMING,  
City Inspector.

New York, Jan. 12, 1818.



*Statement of Deaths, with the diseases and ages, in the City and Liberties of Philadelphia, from the 1st of January 1817, to the 1st of January 1818.*

DISEASES.	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	Total
Aphthas	3	1	1	0	0	0	0	0	0	0	0	0	0	0	5
Asthma	0	0	1	0	0	0	3	0	1	1	1	1	0	0	8
Abscess	0	0	1	0	0	5	2	2	0	1	0	0	0	0	11
Aneurism	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Apoplexy	0	0	1	0	0	0	4	5	5	4	2	0	0	0	25
Atrophy	7	0	5	0	2	1	5	1	1	3	3	2	0	0	30
Angina Pectoris	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Burns	1	2	1	4	1	0	0	1	0	0	0	0	0	0	10
Cancer	0	0	0	0	0	1	5	5	1	5	0	0	0	0	17
Casualties	3	1	0	0	1	6	7	4	1	0	0	1	0	0	24
Catarrh	9	6	5	0	0	1	3	2	1	2	1	0	0	0	30
Child Bed	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5
Cholera Morbus	89	28	9	4	0	3	1	0	0	1	2	0	0	0	137
Colla	0	1	0	0	1	1	4	2	1	2	0	0	0	0	12
Consumption of the Lungs	7	5	11	10	31	76	86	49	44	19	7	4	0	0	349
Convulsions	196	18	8	1	4	5	1	3	1	0	0	0	0	0	167
Concussion of the Brain	0	0	0	0	0	1	0	0	1	0	1	0	0	0	3
Cachexy	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
Contusions	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Decay	6	0	3	0	1	2	1	5	2	5	0	4	0	0	29
Diarrhea	24	7	3	3	0	2	6	5	2	3	1	3	0	0	59
Dropsy	2	0	0	2	4	5	12	13	12	7	3	4	0	0	64
of the Breast	1	0	3	1	3	1	5	4	0	0	2	0	0	0	20
in the Brain	24	11	18	5	3	2	2	0	0	0	0	0	0	0	65
Drowned	0	0	0	8	5	5	10	2	1	0	0	0	0	0	31
Dysentery	6	4	2	1	2	8	2	2	3	2	0	1	0	0	33
Drunkenness	0	0	0	0	0	0	4	7	5	1	0	0	0	0	17
Drinking cold water	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Debility	17	0	7	0	1	5	11	8	12	7	8	3	2	0	81
Diabetes	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Epilepsy	0	0	0	0	0	0	1	0	2	0	0	0	0	0	3
Erysipelas	2	0	1	1	0	0	2	0	0	1	0	0	0	0	7
Eruptions	3	0	1	0	2	1	0	0	0	0	0	0	0	0	7
Fracture	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Fever	6	0	2	2	3	13	6	7	4	1	3	0	0	0	47
Intermittent	1	0	1	0	0	0	0	2	0	1	1	0	0	0	6
Remittent	2	2	2	0	1	4	5	2	1	0	2	0	0	0	21
Bilious	1	0	1	0	1	4	2	2	3	1	1	0	0	0	16
Nervous	0	0	0	0	0	2	1	3	0	0	0	0	0	0	6
Malignant	0	0	0	0	0	1	1	0	1	0	1	0	0	0	4
Typhus	1	0	0	4	5	23	23	17	7	9	3	2	1	0	95
Puerperal	0	0	0	0	1	9	3	1	0	0	0	0	0	0	14
Hectic	0	0	0	0	0	1	2	0	2	0	0	0	0	0	5
Inflammatory	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Carried over,	342	87	88	46	73	192	225	157	116	77	44	27	3	1	1477

	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	Total
is forward, 342	87	88	46	73	192	235	157	116	77	44	27	3	1	1477	
and ation }	2	0	2	1	1	1	2	1	1	2	0	1	0	0	14
- - - - -	0	0	0	0	0	1	0	0	3	0	1	1	0	0	6
ough - - -	10	7	3	1	0	0	0	0	0	0	0	0	0	0	21
- - - - -	8	5	0	0	0	0	0	0	0	0	0	0	0	0	21
- - - - -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
age - - - -	1	0	1	0	1	3	3	2	1	0	0	0	0	0	12
bia - - - -	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
ion of ain }	1	3	4	3	0	2	6	1	0	0	0	1	0	0	21
lungs - - -	3	0	1	1	1	0	0	1	0	0	1	0	0	0	8
tomach - -	7	5	2	0	1	6	6	3	0	0	1	0	0	0	31
lowels - -	6	2	2	2	2	4	3	4	2	1	1	0	0	0	29
liver - - -	0	1	0	0	1	5	6	5	5	1	2	0	0	0	26
ladder - -	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
- - - - -	0	0	0	0	0	2	7	6	6	2	0	0	0	1	24
- - - - -	2	0	0	0	0	0	0	0	0	0	2	0	0	0	4
- - - - -	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
aw - - - -	0	0	0	0	2	2	4	1	0	0	0	0	0	0	9
- - - - -	0	0	0	0	0	0	0	0	0	2	14	26	8	0	50
- - - - -	11	7	2	0	3	9	19	16	11	6	2	2	0	0	88
- - - - -	0	1	0	1	1	1	3	5	4	6	8	2	0	0	32
sm - - - -	0	0	0	1	1	1	0	4	0	1	1	0	0	0	9
- - - - -	2	2	1	2	1	3	2	2	0	1	0	0	0	0	16
bat - - - -	2	2	2	1	0	0	1	0	0	0	0	0	0	0	10
- - - - -	110	0	0	0	0	0	0	0	0	0	0	0	0	0	110
- - - - -	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
- - - - -	1	1	0	0	0	4	11	5	4	4	3	0	0	0	33
- - - - -	0	0	0	0	0	0	5	1	0	0	0	0	0	0	6
- - - - -	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
m - - - - -	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
- - - - -	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
r natural -	6	2	4	9	6	15	10	0	0	0	0	0	0	0	52
da - - - -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
- - - - -	14	5	6	1	0	0	0	0	0	0	0	0	0	0	26
- - - - -	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
- - - - -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
- - - - -	2	3	8	1	0	0	0	0	0	0	0	0	0	0	14
- - - - -	14	2	2	1	1	4	11	7	7	2	1	0	0	0	52

Total, 548 138 134 73 96 256 325 223 162 106 84 61 11 1 2217

Of the above there were 748 males of twenty years and upwards, 438 under  
ars: of females, 545 of twenty years and upwards, 379 under twenty years; and  
en, principally under one year, whose sex is unknown.

*Deaths in each month of the above period.*

Adults.	Children.	Total.	Adults.	Children.	Total.
- - 98	59	157	October - - 86	60	146
- - 89	81	170	November - - 94	48	142
- - 106	79	185	December - - 112	38	150
- - 131	76	207			
- - 140	73	213	Total - - - 1293	924	2217
- - 119	76	195			
- - 86	113	189	By order of the Board of Health,		
- - 107	123	230	JOSEPH PRYOR, Clerk.		
er - 125	108	233	Health Office, January 29th, 1818.		

*Abstract of the Bills of Mortality, for the City and Precincts of Baltimore, from the 1st January, 1817, to the 1st January, 1818.*

Deaths in each Month.	Males.	Females.	Totals.	AGES.			
				Under 1 Year			
January, - -	56	40	96	From 1 to 2			430
February, - -	55	50	105	2 to 3			141
March, - - -	41	34	75	3 to 5			35
April, - - -	36	37	73	5 to 10			24
May, - - -	57	39	96	10 to 20			39
June, - - -	52	37	89	20 to 30			108
July, - - -	61	44	105	30 to 40			198
August, - - -	127	86	213	40 to 50			132
September, - -	80	75	155	50 to 60			90
October, - - -	81	58	139	60 to 70			39
November, - -	43	32	75	70 to 80			24
December, - -	57	45	102	80 to 90			34
				90 to 100			23
				100 to 110			4
							2
	746	577	1323	Total,			1323

*The Diseases and Casualties, causing the above Deaths, were:*

Apoplexy, - - -	5	Jaundice, - - -	1
Asthma, - - -	2	Inflammation, - - -	1
Cancer, - - -	5	_____ of the Liver,	7
Casualty, - - -	35	Insanity, - - -	1
Child-bed, - - -	14	Locked-Jaw, - - -	2
Cholera Morbus, - -	214	Mortification, - - -	13
Colic, Bilious, - -	7	Mumps, - - -	1
_____ Cramp, - -	2	Murder, - - -	3
Consumption, - - -	239	Old age, - - -	57
Croup, - - -	35	Palsy, - - -	10
Dropsy, - - -	36	Pleurisy, - - -	67
_____ Head, - - -	6	Poisoned, - - -	1
Drowned, - - -	38	Quinsey, - - -	3
Dysentery, - - -	10	Rheumatism, - - -	3
Fever, Bilious, - -	78	Sore Throat, - - -	1
_____ Nervous, - -	2	St. Anthony's Fire, - -	4
_____ Typhus, - - -	26	Still Born, - - -	117
_____ Inflammatory, -	4	Sudden Death, - - -	11
_____ Intermittent, -	1	Suicide, - - -	5
Fits, - - -	98	Thrush, - - -	1
Flux, - - -	5	Teething, - - -	9
Gravel, - - -	4	Unknown, - - -	59
Hæmorrhage, - - -	3	Worms, - - -	61
Hives, - - -	2		
Hooping Cough, - -	14	Total,	1323

Of this aggregate of 1323, there were 390 coloured persons.

*By order of the Board of Health.*

SAMUEL YOUNG, Sec'y.

*Statement of Deaths, with the Diseases and Ages, in the City of Charleston, S. C. from the first of October, 1816, to the first of October 1817.*

Deaths in each Month.				AGES.			
	Males	Females	Totals.				
October, - -	47	24	71	Under 5 years			249
November, - -	40	25	65	From 3 to 10			129
December, - -	39	32	71	10 to 20			109
January, - -	52	29	81	20 to 30			283
February, - -	39	35	74	30 to 40			167
March, - -	44	20	64	40 to 50			126
April, - -	31	26	57	50 to 60			74
May, - -	36	36	72	60 to 70			58
June, - -	38	33	71	70 to 80			32
July, - -	8	45	134	80 to 90			16
August, - -	138	70	208	90 to 100			4
September, - -	176	105	281	100 to 110			1
				110 to 120			1
Totals,	769	480	1249	Total,			1249

*The above mentioned Deaths were caused by the following Diseases and Casualties, viz.*

Abscess, - - -	4	Debility, - - -	106
Accident, - - -	27	Diarrhoea, - - -	45
Aneurism, - - -	1	Dropsy, - - -	76
Apoplexy, - - -	7	Drowned, - - -	8
Asthma, - - -	9	Dysentery, - - -	16
Atrophy, - - -	1	Epilepsy, - - -	2
Cancer, - - -	3	Erysipelas, - - -	1
Child-bed, - - -	15	Executed by law, - - -	1
Colic, - - -	4	Fever, - - -	36
Cholera Morbus, - - -	3	— and Ague, - - -	1
Consumption of the } Lungs, }	157	— Bilious, - - -	78
Convulsions, - - -	32	— Catarrhal, - - -	9
Cramp in the Stomach, - -	2	— Nervous, - - -	15
Croup, - - -	7	— Worms, - - -	58
		— YELLOW,* - - -	232

\* As the Yellow Fever had not ceased its ravages at the time of closing the foregoing Abstract, those who fell victims to that calamity on and after the first day of October, 1817, must of necessity be numbered in the next year's statement, which may give rise to erroneous and injurious impressions abroad, although not a case of it may occur in the year 1818. This and other considerations, induce the Editor of the American Daily Advertiser, respectfully to suggest to the Gentlemen composing the Board of Health of the City of Charleston, the propriety of commencing their Abstract, as is done in other Cities of the United States, on the *first day of January*, and closing it on the



Fistula, - - - -	1	Rheumatism, - - -	4
Hæmorrhage, - - -	3	Rupture, - - - -	1
Jaundice, - - - -	1	SMALL-POX, - - -	85
Inflammation of the Lungs,	4	Sore Throat, - - -	8
Brain, - - - -	3	Still-Born, - - - -	9
Influenza, - - - -	11	Sudden Death, - - -	1
Insanity, - - - -	6	Suicide, - - - -	2
King's evil, - - -	3	Teething, - - - -	52
Liver Complaint, - - -	3	Thrush, - - - -	2
Leprosy, - - - -	2	Unknown, - - - -	3
Locked-Jaw, - - - -	25	White swelling, - - -	2
Mortification, - - -	1	Whooping Cough, - - -	1
Old Age, - - - -	47		
Palsy, - - - -	7	Total, - - - -	1249
Pleurisy, - - - -	6		

Of the above there were—

White Males,	415	
White Females,	194	
	<hr/>	609
Black Males,	354	
Black Females,	286	
	<hr/>	640
	<hr/>	
Total,		1249
		<hr/>

HEALTH OFFICE, October 17th, 1817.

By order of the Board,

JAMES A. MILLER,  
Acting City Inspector.

Examined and found correct.

DANIEL STEVENS, *Chairman.*

*last day of December*, in each year. If this suggestion meets the approbation of the Board of Health, would not this be the proper season to publish a statement of the Deaths which occurred in Charleston during the year 1817.

THE  
ECLECTIC REPERTORY  
AND  
ANALYTICAL REVIEW.

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SELECTED PAPERS.

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*State of Medicine in Philadelphia, from the first settlement of Pennsylvania, to the year 1762.*

*From "An Eulogium on Doctor William Shippen, delivered before the College of Physicians of Philadelphia, March, 1809, by DOCTOR CASPAR WISTAR, one of the Censors. Philadelphia, 1818.*

IF Doctor Shippen was fortunate, in possessing many of the personal requisites, for the undertaking in which he was about to engage; I believe it will appear, that he was equally so as to the particular state of medicine in the city when he commenced it. To render this evident, I will quit, for a short time, the proper subject of my memoir, and take a general view of the successive practitioners of medicine in Philadelphia, in the order of time in which they lived. The first physicians were two Welsh gentlemen, who came with the original settlers, in 1682. One of these, Thomas Wynne, is said to have practised with great reputation in London; but he died within ten years after his arrival, and was much engaged in political business during his residence here. He therefore does not appear to have given any particular direction to the medical profession; but his pupil, Edward Jones of Merion,

on the west side of Schuylkill, a man of great worth, educated a son in his own profession. This son continued the professional education to his nephew, our respected predecessor, Doctor Cadwallader; and he extended it to our late beloved vice-president, Doctor John Jones. The other original physician was Griffith Owen, who arrived in the prime of life, and lived here many years. This gentleman appears to have done the principal medical business of Philadelphia, and was highly respected for his professional talents, integrity, and spirit. If the circumstance had not occurred so often, that we are become familiar to it, we should be greatly surprised, that a practitioner of this description, should pass through life, without committing to writing any account of the diseases which occurred; or of the method of treating them which he found most efficacious: such, however, seems to have been the fact. He died in 1717, about the age of seventy; and left a son, who practised medicine here some time after his father's death. I have not heard of any physicians of respectability in Philadelphia, but these, from the first settlement, until the arrival of Doctor John Kearsly senior, and Doctor Græme; the latter of these gentlemen came here in the year in which Doctor Owen died.—Doctor Kearsly probably arrived some time before. I believe Kearsly came in quest of a professional birth. He was, for a long time, a very industrious practitioner, both in medicine and surgery; but, like Doctor Owen, he does not appear to have committed to paper any of his professional observations. Although he made no exertions to increase the progress, either of medicine or of general science, yet he was not deficient in public spirit. Philadelphia was more indebted to him than to any other man, for that respectable edifice, Christ Church; and, by will, he founded and endowed a hospital for poor widows. He educated our late respectable President, Doctor John Redman, and the worthy Doctor John Bard, of New York. His cotemporary, Doctor Græme, came to Philadelphia from Great Britain, with the governor, Sir William Keith; and of course, had an advantageous introduction. He was about thirty years of age, when he arrived; a man of excellent education and agreeable manners; and was therefore much employed as a practitioner, and greatly confid-



ed in by his fellow citizens; but, like Kearsly, the promotion of science does not appear to have occupied much of his attention. He exhibited, however, to the people of this part of America, an object, which was then entirely new to most of them; a very large farm, Græme Park, completely surrounded with hedge, and embellished with great taste and elegance.

Although Philadelphia, in the early part of the career of these gentlemen, does not appear to have held out many advantages in medical science, yet two young men, who received all their education here, made a very respectable proficiency. Doctor Shippen, senior, whom I have already mentioned, was one of them; and Doctor Lloyd Zachary the other. Doctor Zachary was very nearly related to those distinguished citizens, Isaac and Charles Norris. He probably commenced the practice of medicine between 1720 and 30, and died in the year 1756; in the middle period of life, greatly and most deservedly respected. These two last mentioned gentlemen may be considered as belonging to the medical period in which Doctor Shippen's undertaking commenced; for, although Doctor Zachary died some years before, yet he acted an important part in several of the transactions which distinguish this time. He was one of the founders, both of the College and of the Hospital, and a very liberal contributor to each.

We have now come to the time of those physicians, who were in practice when Doctor Shippen arrived. The eldest of them was our eminent predecessor, Thomas Bond. This celebrated physician and surgeon was a native of Maryland; and studied there under Doctor Hamilton, a very learned practitioner. Doctor Bond travelled in Europe, and spent a considerable time in Paris, where he attended the practice of the Hotel Dieu.

He commenced the practice of medicine in this city, about the year 1734, and soon attracted the public attention. He was amongst the founders of the College and Academy, and one of the most active managers of the Pennsylvania Hospital, at its commencement; and with his brother, Phineas Bond, and Lloyd Zachary, made the first offer to attend that institution, as physicians and surgeons. He was an active officer of the Philosophical Society, from its first establishment; and ap-



pears, by the old records, to have been a member of a smaller society, instituted in 1743; of which Doctor Benjamin Franklin, William Coleman, John Bartram the botanist, and Doctor Phineas Bond, were also members. This society, in 1768, united with another which had also been a long time in existence; and the united bodies then assumed the name and form which they now employ. His brother Doctor Phineas Bond, who was several years younger, was also educated in Maryland; but he had studied medicine upon a most extensive scale; for he passed a considerable time at Leyden, Paris, Edinburgh and London; and was not only well disposed to promote, but well qualified to judge, of every undertaking for the improvement of his country. In conjunction with the much respected Thomas Hopkinson, he originated the scheme of the College, now the University of Pennsylvania. Not practising surgery, he moved in a different line from his brother; but no medical man in Pennsylvania ever left behind him a higher character for professional sagacity, or for the amiable qualities of the heart.

Doctor Thomas Cadwallader, who has already been named, comes now to be again mentioned. To complete his education, he went to England; and, I believe, also to France. In England he studied Anatomy under the celebrated Cheselden; and, according to correct information, I find, that on his return to Philadelphia, he made dissections and demonstrations, for the instruction of the elder Doctor Shippen, and some others, who had not been abroad. This, probably, was the first business of the kind ever done in Pennsylvania.

From the place of its performance, the back part of the lot on which the Bank of Pennsylvania now stands, I suppose, that the Anatomy of that day, as well as of the present, enjoyed the honourable protection of literature; and that the dissections were made under the auspices of the most profound scholar of Pennsylvania; the President, James Logan, founder of the Loganian Library.

Cadwallader made equal steps with the Bonds, in promoting the interests of the Hospital, College, and Philosophical Society; and always had a great share of well-merited influence with his fellow citizens.

Doctor Shippen, senior, although his opportunities had been very different, supported, at that period, equal rank in his profession with these gentlemen; and also paid great attention to the public objects I have mentioned.

The fifth man of this class, was our late worthy President, Doctor John Redman. He first studied in Philadelphia, under Kearsly; and then, in quest of improvement, visited London, Edinburgh, and Paris; and graduated in Leyden, a short time after the death of Boerhaave. His professional education was therefore of a superior kind. He was much employed as a practitioner, soon after his return to the city; and was long a faithful physician of the Hospital. He was also a trustee of the College, and a member of the Philosophical Society; but he had very little leisure, either for literary or philosophical pursuits; for the number of his patients was immense.

The youngest physician of this class was Doctor Cadwallader Evans. This gentlemen had been one of the first pupils of Thomas Bond, but completed his medical education in England. He was a descendant of a much venerated early settler; and, with the rest of his family, retained the virtue and character of their ancestor; having a great share of public spirit as well as of professional worth.

Such were our predecessors. From this short sketch of their history, I think it may be inferred, that they effected a most important change in the literature and science of their country; and that Doctor Shippen could have had no better men for patrons.—When we consider the state of the public mind, as evinced by the establishment of the Hospital, College, and the Philosophical Society, soon after,—when we reflect, that the experiments of Franklin, on the lightning of heaven, must have prepared our fellow citizens for the investigation of every other part of nature, and that the sacred principle of toleration, established by our great founder, may also have operated in favour of Anatomy;—we must conclude, that Shippen could not have fixed upon any part of the new world, which, at that time, was more promising than Philadelphia. He was not disposed to neglect any of these advantages.



*On the use of the Prussic (Hydrocyanic) Acid in the Treatment of certain Diseases of the Chest, and particularly in Phthisis Pulmonalis. By DR. MAGENDIE. (Read at the Royal Academy of Sciences of Paris the 17th November, 1817, and communicated exclusively to the Editor of the Journal of the Royal Institution.)*

[From the Journal of Sciences and the Arts, No. 8. for 1818.]

MY DEAR SIR,

The very distinguished author of the subjoined memoir, well known for his zeal in promoting physiological science, has transmitted the original to me, immediately after its having been read before the Royal Academy of Sciences at Paris, with a request that I would translate it, and publish it exclusively in the Journal of the Royal Institution. The well merited reputation which this Journal has gained among the learned of the continental nations, for its candour, impartiality, and the originality of some of its valuable Papers, will explain this preference in my friend Dr. Magendie; and I feel happy in the opportunity of saying, that it is his intention, and that of many other eminent characters in Paris and in Italy, with whom I have conversed on the subject, occasionally to favour the Journal with their original communications.

On the subject of the following pages I might descant a little, were it not superfluous to repeat what the author himself has so clearly stated. Its importance is too evident to need any recommendation. But you will perhaps allow me to say, that having been present at some of the experiments; conscious as I am, from actual examination during my residence in Paris, of the truth of many of the facts brought forward; and enjoying the pleasure of intimately knowing the author, to whose sagacity and talents I shall be happy on all occasions to do justice, I cannot hesitate in recommending Dr. Magendie's paper to the earnest attention of all my medical brethren.

Yours truly,

A. B. GRANVILLE.

8, Saville Row,  
December, 1817.

PHYSIOLOGICAL experiments are of the utmost importance in the practice of medicine. It is by means of them, that substances used as medicines on mere hypothetical principles are justly rejected, and the really active remedies better known, or more beneficially employed, by varying their proportions and mode of administration. Another great advantage resulting from physiological experiments, is the discovery of new remedies, which the physician is enabled to make by their assistance; and by directing his attention to substances already known, but either neglected or seldom used, as well as to those preparations, which modern chemistry is daily bringing before us, and which, in the hand of an able and experienced practitioner, may become particularly useful to mankind.

It was on account of this firm persuasion, that I have ventured, at different periods, to call the attention of the Royal Academy of Sciences to the poisonous and medicinal qualities of the *Upas tieuté*, the *nux vomica*, the *supertartrate of antimony and potash*, and the *ipécacuanha*. The favourable reception which my researches have met with, have encouraged me to proceed farther; and, I shall have the honour this day of laying before the Academy, the result of my inquiries respecting the action of the prussic or hydrocyanic acid on the animal system, and the good effects which may be derived from it in the treatment of several diseases.

The prussic acid, discovered in 1780, by Scheele, was soon afterwards reckoned amongst the poisonous substances; an opinion which was confirmed by the experiments made, both in Germany and France, by Messrs. Coulon, Emmert, Robert, Orfila, &c.—From their experiments, and from some which are peculiarly my own, it results; 1st, that the prussic acid, whether liquid or in the state of vapour, is injurious to the life of all animals, and in many cases, to that of vegetables; 2d, that death produced by this acid is much more instantaneous, from the circulation becoming more rapid, and the lungs more distended; 3d, that it acts on warm blooded animals by destroying their sensibility and the contractility of the voluntary muscles; and would act in a similar manner on man, where the dose given is greater than what will be hereafter mentioned.



It cannot be denied, therefore, that the prussic acid is a very active poison; and yet all the experiments I have just now alluded to, have been made with the prussic acid of Scheele, which contained a very considerable quantity of water, and was consequently very weak. From this circumstance it will be easy to conceive, that the effects of the *pure* acid, prepared according to Gay Lussac's directions, must need be much more energetic. Its activity, indeed, is really frightful, even to those who are accustomed to witness the effects of poison. Of this the Academy shall judge by the following facts.

*Experiment 1.* The extremity of a glass tube which had been previously dipped into a phial containing some pure prussic acid, was immediately plunged into the throat of a strong dog. The tube had scarcely come in contact with the tongue, than the animal made two or three long and rapid inspirations, and fell dead. No method we could devise, enabled us, afterwards, to trace the smallest sign of sensibility in the muscular organs of this animal after death.

*Experiment 2.* An atom of the acid was applied to the eye of another strong dog; the effects were as sudden and as fatal as in the preceding experiment.

*Experiment 3.* A drop of the acid diluted with four drops of alcohol, were injected into the jugular vein of a third dog. The animal fell dead, that instant, as if struck by a cannon shot or by lightning.

In short, the pure prussic acid, prepared according to M. Gay Lussac, is without doubt, of all the known poisons, the most active and the most promptly mortal. Its deleterious and powerful influence permits us to believe, what the historians have related, of the criminal talent of Laocustus; and render the accounts of those extraordinary and sudden cases of poisoning, so frequent in the annals of Italy, less marvellous and incredible.

I must not omit to say, likewise, for the sake of those who should feel disposed to make experiments with this substance, that the utmost caution is necessary; as it is impossible to breathe its vapour without feeling the most dangerous effects. Owing to some neglect on our part, in this respect, we have at

one time experienced the most excruciating pain in the chest, accompanied by a feeling of insupportable oppression, which lasted some hours.

It might appear from all this, that the pure prussic acid, in the hands of one intent on murder, would become the instrument of crime, without fear of detection; but the public may make themselves easy on that score. More nicety of manipulation, and dexterity in the operations of chemistry is required to procure this acid, than falls to the lot of common people; and even when properly prepared, it is almost impossible to preserve it in its state of purity, as I have ascertained by direct experiment. It is spontaneously decomposed at the ordinary temperature of the atmosphere, and then loses, in a short time, all its obnoxious qualities. Besides, though the prussic acid produces death, without any visible alteration of the animal organs, it is easy to detect a case of poisoning by it; for the body will exhale, during several days, a strong smell of bitter almonds.

Poisonous as it is, there is no doubt, but that the prussic acid may, when properly diluted with water, be used as a medicine with safety. We know from the experiments which Mons. Coulon made on himself, that it may be given to the dose of sixty drops without producing any very serious inconvenience. Besides, the pretty frequent use made in medicine, of the laurel water, in which the prussic acid enters, as a component principle, proves that it may be introduced into the stomach when properly diluted. Nothing therefore, shews any impropriety in its use as a remedy; a circumstance which has already induced some French and Italian physicians to give it in various disorders. If their success has not been equal to their expectations, it is because they did not seem sufficiently aware of its mode of action on the animal economy; and without this knowledge it is impossible to make a right use of any new remedy whatever.

In studying the phenomena of poisoning by prussic acid, I have often observed, that animals, in which no trace of sensibility, or muscular contractility could be found, would often continue to breathe for several hours, freely; while their circulation, though much accelerated, remained apparently unal-



tered. These animals indeed might have been said to be dead with regard to their external functions, yet still enjoying life, through their nutritive faculties.

This property of extinguishing the general sensibility without any ostensible injury to the respiration and circulation, the two principal functions of life, induced me first to believe, that the prussic acid might be advantageously used in cases where the disease seemed to owe its origin to a vicious augmentation of sensibility. From that moment I determined to use it whenever any such case should offer itself to my attention.

About three years ago I was consulted in behalf of a young lady, aged 27; who, for the space of eighteen months, had been distressed by a dry short cough; which became stronger in the evening and in the morning. Alarmed at these symptoms, which seemed to indicate an affection of the lungs, her friends took the advice of several of the most distinguished medical practitioners of the capital, who all prescribed the usual remedies in such cases, but without success. I ordered her six drops of Scheele's prussic acid, prepared by Pelletier, diluted with three ounces of a vegetable infusion; to be taken by spoonfuls every two hours. The following day the cough had considerably diminished, and it disappeared entirely on the fourth.

The cough however, having made once more its appearance six months afterwards, I repeated the same remedy with an equal success.

Since then I have had repeated opportunities, but chiefly with young ladies, to employ the prussic acid in cases of nervous and chronic coughs; and have always obtained the greatest success, without having observed any inconvenience from it. In no case have I gone beyond the dose of *ten* drops taken at intervals during twenty-four hours, and diluting it with several ounces of some fluid vehicle.

Very lately I have succeeded in calming by this same means a convulsive cough, with which an elderly lady of a nervous temperament had been greatly affected, and which for six days previous to my seeing her, had come on by alarming fits, depriving her of all rest. I was so much the more willing to

adopt in this case the use of prussic acid, as the patient could take neither opium nor any preparation of poppies without being grievously incommoded.

After thus having ascertained the efficacy of the prussic acid in the treatment of dry convulsive cough, I thought it was indispensable for me to inquire whether the same means might not be employed with success to combat the cough and other symptoms which overpower the unhappy consumptive—and whether it would not influence, or even suspend the progress of pulmonary consumption.

The result of my trials has been favourable with regard to the first of these conjectures; and on fifteen persons, affected with phthisis, who had been placed under my care for the last three years, I have constantly found that the use of the prussic acid, given in small but repeated doses, diminished the frequency of the cough, moderated, and rendered more easy the expectoration, and lastly, procured the patients some sleep at night without any colliquative sweats. Those who are accustomed to follow the march and progress of phthisis, and witness the sufferings without number, by which individuals attacked by this terrible malady are overpowered, will easily appreciate the real benefit of this success.

Since the beginning of the month of August last to this day (November) I have had many opportunities of studying the effects of prussic acid on a great number of phthysical patients at the hospital of *la Charité*. Mons. Lerminier, physician to that hospital, in which such diseases are very frequent, has, at my request, agreed to administer the prussic acid in about twenty cases, at the dose of four drops properly diluted with water.

The greater number have shewn evident signs of amelioration, and some seem much better at this moment. The cough is considerably diminished. The expectoration has become easy, and sleep came to shorten their sufferings. These improvements became more evident, where the disease was in an incipient state; a circumstance which is not difficult to explain, when it is considered, that the lungs are in a state of disorganization, in the second, and above all, in the third stage of consumption.

Yet as I wish to state merely, in this place, the *exact* effects



of the prussic acid, I must avow, that amongst the patients of *la Charité*, who have used it, some, whose disease was near its end, did not derive any very sensible benefit from it; and that in two instances, in which the patients had taken the acid at too short intervals, they experienced some headache, and a kind of vertigo which lasted some seconds. In a third case it was feared that the acid had proved injurious.

A young man aged 29 was admitted into the hospital towards the end of September last with all the symptoms of a confirmed phthisis.\* The acid was given in the dose of six drops only. The cough diminished, the second day, but the oppression increased; the third day it became suffocating, though the acid had been discontinued the preceding day; and the patient fell into a sort of insensibility which terminated in a few hours in death. This could not have failed to raise some suspicions against the remedy, if the examination *post mortem* had not clearly shewn, that the fatal termination of the malady, was owing to an immense quantity of serous fluid found in the left side of the thorax; the heart being thrown to the right, and touching the ribs of that side. Neither the stomach nor the body exhaled any prussic smell. The disease in this case was in its second stage; but it was evidently not the principal disease by which the patient was affected; a circumstance which will account for the absence of all sort of beneficial results from the prussic acid.

In my private practice I never observed any bad effect to result from the action of the prussic acid given as I directed, which may be accounted for by considering the great care and attention which a patient in the bosom of his family receives at every moment; the case being necessarily different in regard to patients in even the best regulated hospitals.

From all that precedes, I think I am warranted in concluding, that the prussic acid, given in small doses, mixed with a certain quantity of water, may be advantageously employed as a palliative treatment of consumption, with a view of calm-

\*Contrary to the established practice of Mons. Lermnier, the chest was not explored by means of percussion, as is generally done with all the patients who enter at *la Charité*. This prevented the discovery of an old inflammation of the pleura which affected the left side of the chest.

ing the cough, facilitating the expectoration, and procuring sleep; and that as such it must be considered as the first among the substances usually employed for similar purposes; as it does not seem to excite, like the opiates, any colliquative sweat.

It still remains to inquire, whether, by the assistance of the prussic acid and of its marvellous activity, we might not hope to render the march of phthisis more slow, and even to cure it. But these questions, in themselves so important, on account of the too fatal prevalence of the malady, cannot be decided by a small number of facts and experiments. They ought, on the contrary, to be multiplied as much as possible, taking at the same time into consideration all the circumstances which might influence the results; and divesting ourselves of all sort of prejudice.

I am continuing my experiments on this subject, conjointly with M. Lerminier, at the hospital of *la Charité*; where, from twenty to thirty consumptive patients are habitually received; and I am in hopes to lay before the Academy, in the course of the next year, some facts worthy of their attention.

Some may consider it as a mark of temerity in me to suppose that phthisis may be cured, when so many very eminent authors look upon it as absolutely mortal. But admitting that phthisis be incurable, with reference to all the substances hitherto employed, and the experiments hitherto made for that purpose, in the true spirit of truth and investigation, the same mode of reasoning cannot hold good with regard to new substances, remarkable for the energy of their action on the animal economy; besides, ought not the physician to direct his attention to the cure of such diseases as *phthisis, cancer, &c.* in preference to merely varying the treatment of such diseases as, from peculiar circumstances and their nature, terminate always happily, whatever be the remedy suggested by fashion or caprice?

I shall now relate two cases in which there is reason to presume that phthisis was checked in its progress by the use of prussic acid.

#### CASE I.

A lady from Lyons, now residing in Paris, of a constitution



eminently bilious, after having experienced several misfortunes, was, in 1814, attacked by all the symptoms which characterise phthisis in its first stage. Circumstances not allowing her to attend to her health, she neglected it, until within the first months of 1815, when the disease having made great progress, she consulted me: I found her labouring under all the symptoms of the second stage of tuberculous consumption, with a cough returning incessantly, and a slow continued fever preying upon her and undermining her existence. The prussic acid was recommended, and taken at the dose of from six to ten drops in twenty-four hours, diluted. This acid had been prepared by Mons. Planche, by a new process which I shall hereafter describe. The remedy was continued for about two months. From the first day the cough diminished, the patient slept, and without pushing the dose higher than ten drops in the 24 hours, all the symptoms of the disease disappeared, the breathing became natural, the cough, expectoration, and sweats ceased. In short, the lady was perfectly cured, and has never since experienced any symptoms, which indicate the least disposition to a relapse. Her lungs only have become very sensible to the influence of atmospherical variations.

Must we conclude from this fact, that a consumption in its second stage has been cured by the prussic acid? I am far from thinking so; for I know with how much reserve we ought to draw any general and positive conclusion. Yet such as it is, and with all the importance attached to it, I submit the case to the practitioners, who take an interest in the progress of science.

## CASE II.

An English lady aged 28, tall, and of a weak constitution, with a chest transversely ample, but narrow, was frequently subject to colds from her infancy. Last year, while crossing over from France to England, she was attacked by an inflammation of the lungs, with acute pain of the left side of the thorax, and spitting of blood. Bleeding, blisters, and all the means usually adopted in such cases, were had recourse to, and she got well; but she continued to suffer from a short dry cough, of no great intensity during the day, but which became

greatly exasperated in the night. Several means were employed in England to check it, with no success. Believing that the climate of France might prove more beneficial to her health, she returned to Paris about four months ago. In spite of the fineness of the season, and residence in the country, the cough made considerable progress; she became uneasy and alarmed; and I was sent for about the middle of September last; when, after a mature examination of all the preceding circumstances, and her actual state, I did not hesitate in considering her as labouring under the first stage of pulmonary consumption. I prescribed the prussic acid, prepared by Mr. Planche, in the dose of 8 drops in three ounces of water in 24 hours. She has continued it ever since, and is at this day taking it. Her cough has nearly vanished altogether; she has gained considerable *en bon point*; and she considers herself at this moment as quite recovered.

Far be it from me to suppose that this is another instance of pulmonary consumption cured by the prussic acid. Yet it must be confessed, that if examples like the two preceding ones, were to become numerous, nothing could then prevent us from hoping, that we may at last have found a substance capable of arresting the progress of one of the most desolating maladies by which humanity is afflicted.

I shall conclude with a few words on the mode of preparing the prussic acid. If it be prepared, in the way directed by Scheele, we run the chance of obtaining it at various degrees of concentration—a circumstance which ought by all means to be avoided. M. Planche, one of the most distinguished *pharmaciens* of Paris, follows a method which renders its preparation less uncertain. Instead of drawing one-fourth of the produce by distillation, as the illustrious Swedish chemist first suggested, he stops the operation, as soon as  $\frac{1}{6}$  of the produce has passed into the receiver. He next rectifies the liquid thus obtained by means of a gentle fire, over  $\frac{1}{3}\frac{1}{10}$  of carbonate of lime, and draws off  $\frac{3}{4}$  only of the whole by distillation.

Thus prepared, the prussic acid is certainly far from possessing the activity of that prepared by Gay Lussac; but it has more energy than that of Scheele, and above all, it has an *invariable* energy; since, according to M. Planche, it is always



at the same degree of concentration. It also affords one other advantage, that of being susceptible of preservation, if kept in a cool place, equally removed from the influence of air and light.

I have also employed in many cases the acid prepared according to Scheele's method, and have not been struck with any difference in its action, such as the theory of chemical doctrine seems to suggest, whenever I have taken care to get it at the houses of our best chemists.

The observations in this Paper are,

1st. That the pure prussic acid is a substance eminently deleterious and altogether unfit to be used as a medicine.

2dly. That the prussic acid diluted with water is beneficial in cases of chronic and nervous cough.

3dly. That this same acid may be useful in the palliative treatment of phthisis, by diminishing the intensity and frequency of the cough, and in procuring sleep, &c.

4thly. That there is reason to hope, that this same substance may become advantageous, as a curative treatment of pulmonary phthisis, particularly when in an incipient state.

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*Some further Observations on the Use of the Colchicum Autumnale in Gout.* By Sir E. HOME, Bart. V. P. R. S.

[From the Philosophical Magazine, for December, 1817.]

I LAID before the Society, some experiments and observations in favour of this medicine acting upon the gout through the medium of the circulation, and not by its effects directly upon the stomach and intestinal canal.

The object of the present paper is to show, that the infusion throws down a deposit, the separation of which does not appear to diminish the specific effects upon the gout, and renders those upon the stomach and intestines milder than when the deposit is taken along with the infusion.

The bulb of the *Colchicum autumnale* contains a certain quantity of extractive matter, and a large portion of mucilage,

both of which are taken up by the wine, in the first instance: when the strained liquor is allowed to stand, a considerable deposit almost immediately takes place.

In the first trials that were made with this medicine in St. George's hospital, it was natural to inquire whether this deposit contained any medical virtues: and upon trials frequently repeated, it was found to have none.

This led to the opinion that the extractive matter suspended in the wine, was alone the active part of the medicine; and not only the first deposit was inert, but also that which from time to time was afterwards found to take place.

Of this opinion I was led to entertain considerable doubts, in consequence of having found upon one occasion, in which I took half a bottle of the *Eau Medicinale* which had been poured off without shaking the bottle, that the sensible effects were very mild; those produced by the other half, in which the deposit was mixed, were unusually severe, the nausea being greater, and a greater number of stools being produced.

These doubts were much strengthened, when I found that the effects of the *Eau Medicinale* are more violent upon many stomachs than those of the vinous infusion of the *Colchicum*; which probably arises from the *Eau Medicinale* being kept in small bottles, in consequence of which all the deposit that takes place is given along with the infusion; while the vinous infusion of *Colchicum* being kept in large bottles, the deposit falls to the bottom. If such deposit increased the powers of the medicine in counteracting the symptoms of gout, it would be unnecessary to prosecute this investigation further, since it would be absurd to diminish the violence of a medicine, if, by so doing, its efficacy is to be diminished in an equal degree.

To ascertain this point, I gave sixty drops of the vinous infusion of *Colchicum*, in which there was no deposit whatever, to a man labouring under a severe paroxysm of gout, to which he was a great martyr, and whose paroxysms were usually of several weeks continuance; he was sixty years of age.

The medicine was exhibited on the 17th of January 1817, his pulse being 115. In half an hour he had slight nausea, which soon went off. In five hours, a profuse perspiration came on, and the pain of the gout entirely subsided, leaving a sore-



ness in the parts that had been affected. In twelve hours the bowels were gently moved, his pulse 105 and irregular; in fourteen hours his bowels were acted on a second time; in nineteen hours his pulse was 92, and natural; in forty-eight hours he was quite well, and has continued so a period of more than three months.

The result of this case satisfied me that the infusion contained the specific remedy for the gout, and that the deposit is not necessary for its removal.

This rendered it probable that, where the deposit is taken along with the infusion, its solid form prevents it from being carried into the circulation of the blood, and it remains in the stomach, producing more, or less mischief in that viscus, without being any way concerned in driving away the disease for which the medicine was exhibited; in this respect resembling many of the salts of mercury, which irritate the bowels, without relieving the symptoms of the venereal disease.

I explained these opinions to Mr. Gatcombe, who gives me his assistance in my professional pursuits, and requested him to investigate this subject.

To do this more completely, he began by repeating the three experiments detailed in my former paper, substituting the *Eau Medicinale* for the vinous infusion of *Colchicum*, so as to determine with more precision whether they are or are not the same medicine.

*Exp. 1.* Thirty drops of the *Eau Medicinale* with the deposit were injected into the jugular vein of a dog: the effects were the same as in my experiment with the same quantity of the vinous infusion of *Colchicum*, only the animal was two hours longer in recovering from them, and was purged for nine hours afterwards.

*Exp. 2.* Sixty drops of the *Eau Medicinale* were given by the mouth to the same dog: the effect was less than in my experiment with the vinous infusion of *Colchicum* exhibited in the same quantity: this arose from a very copious evacuation of urine having been produced.

*Exp. 3.* One hundred and sixty drops of the *Eau Medicinale*, injected into the jugular vein of a dog, produced rather more violent effects than in my experiment with the same

quantity of vinous infusion of *Colchicum*; the animal died in six hours, and after death the appearances of inflammation in the bowels were more violent, approaching to mortification.

Mr. Gatcombe having found so exact a similarity in the effects of the two medicines, in these trials, I requested him to make the following comparative experiment on the effects produced upon the stomach and bowels by the *Eau Medicinale*, in which there is a deposit, and the vinous infusion of *Colchicum*, in which there is none.

*Exp. 4.* One hundred and sixty drops of the *Eau Medicinale*, taken by the mouth, produced the same effect, and left the same appearances of death, as when that quantity was injected into the vein, only that the animal lived nine instead of six hours.

One hundred and sixty drops of the vinous infusion of *Colchicum* were given to a puppy of the same litter; they produced vomiting, purging, and a great flow of urine; but the animal very soon recovered.

Two hundred drops of the same infusion, after an interval of several days, were given to the same dog, and the effects were the same; the dog had become much improved in his looks and condition.

Three hundred drops, after an interval of several days, were given to the same dog: effects, corresponding with those of one hundred and sixty drops of the *Eau Medicinale*, were produced. The dog died in nine hours, and the appearances of inflammation after death were of the same kind, but not nearly so extensive.

From these experiments, the *Eau Medicinale*, with the deposit, produces double the irritation on the coats of the stomach and intestines, that is brought on by the vinous infusion of *Colchicum*: this probably arises from the local inflammation brought on by the deposit, upon the internal membrane of these viscera.

To determine as nearly as possible the effects of the deposit, when applied in a solid form to the coats of the stomach and intestines, the following experiment was made.

*Exp. 5.* Six grains of the deposit of the vinous infusion of *Colchicum* were given to a dog, in bread and milk; in three



hours it produced vomiting and purging, which lasted twenty-four hours; during the latter part of that time, there was blood in the stools, as well as in what was brought up from the stomach.

I wished to repeat this experiment with the deposit from the *Eau Medicinale*, but found, in bottles that had been kept seven years, the wine had become vapid, and, in this decomposed state, the acrid part of the deposit had been taken up again; so that in twelve bottles, containing different quantities, only five grains could be procured, which was quite inert.

Being at a loss to know whether the extractive matter deposited from the infusion is in reality more acrid to the stomach than that suspended in it, or the circumstance of its being applied in a solid form renders it so, I requested Professor Brande to acquaint me, if it could be the effect of any chemical decomposition having taken place.

He favoured me with the following explanation, which is highly satisfactory: "There are certain vegetable bodies, which, when infused in water or diluted spirit, furnish a solution which lets fall a sediment, in which their activity, as purgative medicines, chiefly resides; this is remarkably the case with the wild cucumber or *Elaterium*. The sediment is a very drastic purge; the part that remains dissolved is comparatively mild in its operation upon the bowels." This explanation of Professor Brande applies to the *Colchicum*, and we are now enabled to separate the purgative qualities of the vinous infusion of *Colchicum* and *Eau Medicinale*, from those which prove a specific for the gout, in the simplest possible manner, by keeping them in large bottles, instead of small ones, and not going too near the bottom.

It also explains what is asserted by Prosper Alpinus\*, that the Egyptian women eat the fresh bulbs, that they may grow fat; an effect which was found to take place in the dog, while the dose was confined within such limits as not to act too violently upon the bowels.

The bulbs of the Egyptian *Colchicum*, when long kept, weigh one drachm each; on being steeped in water they dou-

\* Hist. Nat. Egypt. pars 1. lib. 2. cap. 14.

ble their weight; so that the quantity of extractive matter contained in two or three recent bulbs, while combined with the mucilaginous matter, of which the bulbs are principally composed, is not likely to be sufficient to do more than act as a brisk purgative, the occasional use of which tends to make people grow fat.

Since this paper was read, the patient who is mentioned as having had the gout in January, has had another attack: it came on the 10th of July, and was removed in the same manner as the former, by the same dose of the medicine. The President of the Society also, convinced by the evidence contained in this and the former paper, that the *Vinum Colchici*, in which there is no deposit, must be a less hurtful medicine than the *Eau Medicinale*, thought it a duty to himself and the public to make trial of it; and on the 20th of July, when the gout in his left hand and the whole of the joints of that side of the body was very severe, allowed me to give him ninety drops of the *Vinum Colchici*, and found that the symptoms of gout were sooner and more completely removed than they ever had been by the *Eau Medicinale*, of which he has an experience of seven years; having taken it regularly ever since the 17th of February 1810, and during that time kept a regular account of the doses, their effects, and the intervals between them.

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### *On the Pellagra, a disease prevailing in Lombardy.*

BY HENRY HOLLAND, M.D. F.R.S.

[From the Medico-Chirurgical Transactions, Vol. VIII. for 1817.]

A SHORT residence in the north of Italy, at two successive periods, has given me the opportunity of making some observations on the singular variety of disease, which forms the subject of the following paper. The extensive and destructive progress of the Pellagra in Lombardy during the last twenty or thirty years, has rendered it an object of equal interest to the physicians and governments of the country, and has led even to the suggestion of legislative means for controlling



the evils which it has inflicted on this portion of Italy. Many of the remarks on the subject which I shall take the liberty of offering to the Society, are founded on my own observations in the hospitals at Milan and elsewhere. The remainder have been furnished me, either by conversation with different Italian physicians; or by the perusal of two or three of the several treatises, which have been composed upon the pellagra. From the latter I have derived in particular, much of what I shall have to say, as to the locality, progress, and causes of the disease: these being the points, which, for obvious reasons, are least accessible to the observation of the traveller.

The pellagra has derived its name from an affection of the skin, which is one of the earliest and most conspicuous symptoms of the disorder. Though there has been some controversy on the subject, yet I do not hesitate in classing the disease amongst the impetigines, and perhaps even a generic distinction under this class might be warranted by the difference between its symptoms, and those of the leprosy or scurvy, to which it seems to be most nearly allied. Alibert, in his valuable work on the Diseases of the Skin, has described it under the name of the *Ichthyosis Pellagra*;<sup>\*</sup> but from my own observation of the disorder, I do not feel entirely satisfied with this name or classification. The account I am about to give of its appearances may afford some means of judging as to this point; and I may remark, meanwhile, that the question of nosological arrangement, is one of comparatively small importance, either to the diagnosis or treatment of the malady.

The pellagra, as an endemic disease, prevails chiefly in the provinces of Lombardy, lying between the Alps and the Po. This country may be briefly described as a vast surface of alluvial plain, little elevated above the sea; but rising on its northern side into chains of hills, which intermediately connect it with the Swiss and Tyrolese Alps. From the long, narrow, and profound lakes among these hills, the numerous rivers issue, which flowing southwards to the Po, and giving their waters into a number of artificial channels for the purposes of irrigation, maintain that extraordinary fertility of soil,

<sup>\*</sup> Alibert, *Description des Maladies de la Peau*; page 175.

for which the plains of Lombardy have long been celebrated. The principal objects of cultivation on these plains, besides the vineyards extensively spread over their surface, are maize, rice, and millet. In some districts, and particularly between the rivers Adda and Ticino, the pastures are extensive, and yield a considerable produce of milk, from which the Parmesan cheeses are made. The hilly country just noticed, on the northern side of Lombardy, is less productive, and cultivated on a more limited scale. The vallies, however, intervening amongst these hills, are of great fertility, yield a considerable quantity of grain, and much wine from the numerous vineyards to which they give shelter.

The district which appears to have suffered most from the ravages of the pellagra, is that which formerly constituted the Duchy of Milan, and particularly the Alto-Milanese, or that portion of country lying up towards the hills between the Lago Maggiore and the Lago di Como. It was in this part of Lombardy that the disease first became an object of medical attention; and some time elapsed before it was described as appearing in the Venetian provinces, and near the shores of the Adriatic Sea. At the present time it has unhappily been recognized as increasing in every part of Lombardy; as well on the plains, as among the hills which rise on their northern border towards the Alps. I have had the opportunity of observing it also in the province of Friuli, the district which intervenes between the foot of the Carinthian Alps, and the northern shore of the Adriatic Sea.

Before alluding to the probable causes which determine this locality and extension of the disease, it will be desirable to relate the symptoms which characterize it in the most ordinary form of its occurrence; though these, I may remark in the outset, display frequent varieties, and are often complicated with other characters of disease. The pellagra is a malady confined almost exclusively to the lower classes of the people, and chiefly to the peasants, and those occupied in the labours of agriculture. Though there are doubtless exceptions to this statement, yet the facts it includes are so general, as to render it of importance in the history of the disease. The first distinct appearance of the malady is under a local cutaneous form;



preceded, however, occasionally by languor, debility, and other indications of a general cachectic state of body. The local symptoms very generally show themselves in the first instance, early in the spring, at the period when the mid-day heat is rapidly increasing, and when the peasants are most actively engaged in their labours in the fields. The patient perceives on the back of his hands, on his feet, and sometimes, but more rarely, on other parts of the body exposed to the sun, certain red spots or blotches; which gradually extend themselves, with a slight elevation of the cuticle, and a shining surface, not unlike that of lepra in its early stage. The colour of this eruption is a somewhat more obscure and dusky red than that of erysipelas: it is attended with no other uneasy sensation than a slight pricking or itching, and some tension in the part. After a short continuance in this state, small tubercles are frequently observed to arise on the inflamed surface; the skin almost always becomes dry and scaly, forming rough patches, which are excoriated and divided by furrows and rhagades. Desquamation gradually takes place; which, though it leaves behind a shining, unhealthy surface in the parts affected, yet in the first year of the disease, is rarely followed by a repetition of the appearances just described. Towards the close of the summer, or occasionally still earlier, the skin has resumed nearly its natural appearance; and but that the further progress of the disease is familiar to every inhabitant of the country, the patient might be led to flatter himself that the evil was gone by, and that there was no particular reason to dread its recurrence.

As the persons who are affected by the pellagra in this incipient stage, are rarely brought into an hospital, I have had few opportunities of observing the complaint thus early in its progress. From the instances I have seen however, I should consider the description just given of the local eruption, as being accurate in all material points. With this local affection are connected, even in the first period of the disease, certain general symptoms, which are important in as much as they indicate the constitutional nature of the malady. Debility of the whole body; vague and irregular pains of the trunk and limbs, but especially following the track of the spine and dorsal mus-

cles; headache, with occasional vertigo; irregular appetite, and general depression of spirits; these are the more ordinary symptoms which attend the early part of its progress. The bowels are for the most part relaxed; and usually continue so in the further course of the disease. There are no febrile symptoms; and in females the menstruation is generally continued without irregularity.

The remission which the patient obtains during the autumn and winter of the first year, is almost universally followed by a recurrence of his symptoms in the ensuing spring, under a more severe form, and with much greater disorder of the constitution. The cutaneous disorder is removed, and spreads itself more extensively; though still affecting chiefly the hands, neck, feet, and other exposed parts of the body. The skin becomes callous and deeply furrowed; and large rhagades show themselves, especially among the articulations of the fingers. From the cases I have seen of the cutaneous affection in this stage, I should speak of it as most resembling the inveterate degree of Psoriasis, or of the *Lepra vulgaris*, with some affinity certainly to the *Ichthyosis*, under which, as I have already mentioned, Alibert has classed it.\* The debility is greatly increased in the second year of the complaint; frequently depriving the patient of all power of pursuing his active labours, and rendering him peculiarly susceptible of all changes of temperature. Partial sweats frequently break out without any obvious cause. All the nervous symptoms of the first year are renewed in more severe degree; there is a general tendency to cramp and spasmodic affections; the mind begins to suffer under the disorder; and the feeling of anxiety and despondence is very strongly marked. I find the symptom of *libido inextinguibilis* noticed by one or two writers; but I did not learn this as the result of my own inquiries; and I am rather disposed to attribute the opinion to the credulity common upon this topic; or perhaps to a desire of associating

\* As Alibert's plate gives but a very partial view of the appearances of the pellagrous eruption, I have written to the north of Italy, to endeavour to obtain some drawings which may illustrate this part of the disease. Should I succeed in procuring such drawings, I shall not fail to lay them before the Society.



the pellagra more closely with the leprosy, as described by ancient writers. The other symptoms already noticed, make progress as the heat of summer advances; and with greatest rapidity in those patients who are much exposed to the sun. As in the preceding year, they begin to decline towards the middle or end of the autumn; but the remission, as well of the local affection, as of the general disorder, is much less complete than before, and the patient continues to suffer during the winter from the debility, and other effects consequent upon the disease.

In the third year every symptom is renewed at an earlier period, and in an aggravated degree. The constitutional malady shows itself under a variety of forms; some of the symptoms having considerable analogy to those of scorbutus; all of them indicating a general cachexy of habit, and more particularly a lesion of all the voluntary functions. The debility now becomes extreme: the patient is scarcely able to support himself; and the limbs, besides their feebleness, are affected with pains, which still further impede the power of motion. The diarrhœa continues, and tends of course to augment this debility. Frequently a dysenteric state of the bowels comes on in the latter stages of the disease. The breath is generally fetid; and the odour of the matter perspired often extremely offensive. The appetite and digestion are irregular, yet on the whole, perhaps less affected than most of the other functions. Dropsical effusions now frequently come on; occasionally ascites, but more commonly anasarca. Vertigo, *tinnitus aurium*, and double vision are almost universally concomitants of this stage of the disorder, and all the senses become exceedingly impaired. Some spasmodic affections are very general, and these not unfrequently take a very decided epileptic form.

Connected with these latter symptoms is the effect which the pellagra produces upon the minds of those suffering under the malady, which effect forms one of the most striking circumstances in the history of the disease. The anxiety, watchfulness, and moral depression of the patient are rapidly augmented. In the hospitals appropriated to the reception of such cases, the *Pellagrosi* afford a melancholy spectacle of physical and moral suffering, such as I have rarely had occasion to wit-

ness elsewhere. These unhappy objects seem under the influence of an invincible despondency; they seek to be alone; scarcely answer the questions put to them; and often shed tears without any obvious cause. Their faculties and senses become alike impaired; and the progress of the disease, where it does not carry them off from debility and exhaustion of the vital powers, generally leaves them incurable idiots, or produces occasionally maniacal affections, which terminate eventually in the same state. As a striking proof of this tendency of the disease, I may mention the fact, that at the time I visited the Lunatic Hospital at Milan, there were very nearly 500 patients of both sexes confined there; of which number, more than one-third were *pellagrosi*; people brought thither by the termination of their disorder, either in idiocy or mania. Even this statement gives little adequate idea of the ravages of the disease, in this mode of its termination. The public hospitals of the country are wholly incompetent to receive the vast number of persons affected with the pellagra; and the greater proportion of these unfortunate people perish in their own habitations, or linger there a wretched spectacle of fatuity and decay. Where debility, as generally happens, is the cause of death, it manifests itself in the latter stage, with the usual concomitants of colliquative diarrhœa, spasmodic affections, and coma; and produces a degree of emaciation, scarcely to be surpassed in any other disease.

The mania consequent upon pellagra is often of a very violent kind, of which I have seen some remarkable instances in the Lunatic Hospital at Milan. Where such affections occur, the progress of the disease appears to be in some degree retarded, and the strength less rapidly declines. Attempts at suicide are frequent among *Pellagrosi*; and particularly, it is said, by throwing themselves into the water. Strambi has thought it worth while to characterize this tendency by the name of *Hydromania*.

Though for the sake of brevity, I have described this train of symptoms as going on from the third year, yet I may remark that the pellagra is generally of longer duration; and that other intermissions usually occur in its progress, giving the patient a certain relief in the degree of his sufferings, though



little hope as to the event of the disease. In some instances the cutaneous affection forms the principal indication of the complaint for several successive years; being renewed every spring, and disappearing again in the autumn. In other cases, where it has been found possible to remove the patient to a new situation and mode of life, the disease is still further arrested in its progress. It rarely happens, however, that these means can be practically adopted; and the constitutional malady is generally so far established in the third or fourth year, that little hope remains of benefiting the patient, either by medicine, or change in the mode of life.

I cannot learn that morbid dissections have thrown any light on the pathology of this disease. In some patients the liver, in others the spleen, have been found enlarged and indurated: marks of disease are occasionally seen in the intestines and mesenteric glands, but these appearances are by no means constant; and may more reasonably be considered as effects, than as causes of the malady.

I have already stated the fact, that the pellagra is almost exclusively confined to the lower classes, and chiefly to the peasants who cultivate the soil; the disease being rarely seen in the cities of Lombardy, except in the instance of patients who have been brought thither from the country. I may now add to these facts, that persons of each sex and of every age, are liable to be affected by it; and that the hereditary tendency of the disorder is proved by the circumstance of the symptoms frequently appearing in infants at the earliest period of life. This fact is particularly noticed to me by my friend Dr. Sacco of Milan, who in his frequent journeys through the country, as Director of the Vaccine Establishment in this part of Italy, has had the best opportunities of observation on the subject. The authors who have written on pellagra, as far as I have had the opportunity of seeing them, all concur as to this point, and cite the numerous instances in which the disease continues in families, with an evident predisposition derived from parents who have suffered under it. The symptoms of the disorder, as it appears in infants, are not materially different from those attending it in more advanced life. The cutaneous affection of the hands, arms, and feet, is that which first shows itself; re-

newed and augmented in successive years, and attended with the various symptoms which indicate a cachectic state of the body, and which in the greater number of instances have a fatal termination.

The question whether the pellagra be contagious or otherwise, has of course attracted the attention of all, who have had opportunities of observing the disease. This point, as I believe, on the best authority, has been decidedly settled in the negative. Setting aside particular instances, the general facts may be mentioned, that the disease is almost exclusively confined to the lower classes; that of people living together in the same habitation, some have the disorder, others not; and that in the case of married people, it frequently happens that the husband or the wife is pellagrous, while the other remains wholly unaffected.

From the preceding history of pellagra, in its ordinary form of occurrence, it will be seen that the disease has in some points a certain degree of affinity to the leprosy of the middle and early ages; and this relation has been noticed by most of the authors who have written upon it. The differences, however, in other points, are so distinctly marked, as not to admit of the diseases being classified under the same name; and this remark may be further applied to the scurvy, with which the pellagra is connected by several common symptoms. By some authors indeed, it has been described under the name of the *scorbutus alpinus*; but the greater number have considered it (and apparently with more reason) as a separate disease; though occasionally complicated with the genuine scurvy, which prevails as a frequent disorder in the same districts of country. Titius, one of the writers upon the pellagra, has defined it *Erysipelas, periodicum, nervosum, chronicum*; taking as the basis of this definition, the appearance of the eruption as it first occurs on the skin.\* Its after progress, however, and the concomitant constitutional symptoms, are so different from those of erysipelas, in the common understanding of the term, that it would be difficult to admit such a definition, as giving the nosological arrangement of the disease.

\* Salom. Constant. Titii Oratio de Pellagræ Pathologia. Viteberg, 1792.



With regard to the origin and causes of this singular endemic malady, though a good deal has been written both by Italian and German physicians, yet I do not find any thing which can be regarded as perfectly decisive or satisfactory. The antiquity of the pellagra has been, in particular, a subject of doubt and controversy. Moscati, a Milanese of considerable eminence in science, has stated it as his opinion, that the disease has not been known in Lombardy more than fifty years; and other writers have held the same belief on the subject. A greater antiquity is assigned to it by Strambi, who, being appointed by Joseph II. the director of a hospital established at Legnano, near Milan, for the reception of pellagrosi, had the best opportunities of making himself acquainted with the disease. In his Treatises on the Pellagra, published in three successive years, from 1784 to 1787,\* he mentions the fact of his having seen many pellagrosi in the hospital, who gave him distinct assurances of their fathers and grandfathers having had the disorder; and from some particular instances, he thinks himself entitled to believe that the pellagra must have been known in Lombardy at least sixty or seventy years before the time when he wrote. Francisco Frapolli, physician to the hospital of Milan, who published a short description of the disease in 1771†, contends also for its antiquity; and supposes it possible that it may be the same disorder as one called *Pellarella*, which is casually noticed among the records of the Milan Hospital for the year 1578. This supposition, however, stands without any other proof than the bare analogy of name; and on the whole there is sufficient ground for concluding, from the silence of all preceding Italian medical writers as to this disease, that it cannot have existed under any well-defined form for more than a century, perhaps not even for so long a period.

However this may be, it is certain, from the concurrent observation of all who have attended to the subject, that the pellagra has been rapidly spreading itself during the last fifty

\* De Pellagra Observationes, quas in Regio Pellagrosorum Nosocomio collegit Caietanus Strambio, Regius ejusdem Director. 1784-87. Mediol.

† Francisci Frapolli, Mediolanensis Nosocomii majoris Medici Animadversiones in Morbum vulgò Pellagram. Mediol. 1771.

years; and with greatest rapidity during the latter part of this period. At the time when Strambi wrote, in 1784, he calculated that the pellagrosi formed about a twentieth part of the population in the districts principally suffering under the disorder. It now appears that there are districts in the Milanese territory where the proportion of pellagrosi is one out of five or six in the whole population; and from the intercourse I have had with the medical men in this part of Italy, I am led to believe that the evil is augmenting at this moment in a very alarming degree. I may repeat here the fact I before stated, that the districts thus particularly affected are in the *Alto-Milanese*, where the country rises towards the Alps, which form its northern boundary. Soler, one of the writers who have treated of the pellagra,\* has proposed a division of the disease into the *sicca* and *humida*, founded upon some difference of symptoms, which he believes to exist in the disorder, according as it appears in dry and elevated situations, or on the flat and moist surface of the plains. As I do not find, however, that this division or difference of symptoms is recognized by other authors, it is sufficient to mention the opinion, without entering into further details respecting it. At the same time it seems certain that the disease prevails in some districts much more than in others; that it appeared first in the higher parts of the Milanese territory, and that in this tract of country its ravages are still more extensive than in any other part of Lombardy.

The question regarding the causes of the pellagra I have already alluded to, as involved in much obscurity; and though the current opinions on the subject are certainly on the whole the most plausible, yet they must still be admitted to want something to render them satisfactory. In reference to the remote causes, the most important facts in evidence undoubtedly are, the limited period during which the disease appears to have existed in the country; its being confined almost exclusively to the lower classes, and its rare appearance in the towns or cities of Lombardy. These several circumstances

\* *Osservazioni medico-pratiche sulla Pellagra*, del Luigi Soler. Venezia, 1791.



may be admitted to prove, that the disease depends upon some present peculiarities in the mode of life of the peasants of this country. The climate is obviously not the cause concerned; since this, as far as it is known, has been unchanged for a much longer period, than that which includes the history of the pellagra; or had it been changed, would have affected alike both the higher and lower classes of the population. The same objections may be made to the opinion that any circumstances of mere locality are concerned in producing the disease. It may possibly be true that the plains of Lombardy are more frequently and irregularly flooded than formerly, and that the general surface is more marshy and unwholesome; but this does little to explain the causes of a disorder, which is chiefly prevalent in the higher lands, where such changes have not equally taken place.

The point then to which we are almost necessarily conducted, is the mode of life and subsistence among the peasantry of the country. All those with whom I have conversed on the subject, and almost all the writers on the pellagra, concur in assigning this as the principal cause of the disease. Though I have spoken of Lombardy as one of the most fertile portions of Europe, yet to those who consider the little certain relation between mere productiveness of soil, and the prosperity or comforts of the population dwelling upon it; it will not appear very extraordinary that the peasants of this district should be subject to various physical privations, unknown to the people of countries which are much less favoured by nature. The fact unquestionably is, whatever our speculations as to the cause, that the peasants of Lombardy do for the most part live in much wretchedness, both as regards the quantity and quality of their diet, and the other various comforts of life. It further seems probable, if not certain, that this evil has been progressively augmenting within the last fifty years; partly, perhaps, an effect of the wars which have so often devastated the country by marches and military contributions; partly a consequence of the frequent changes of political state; together with the insecurity, the variable systems of government, and the heavy taxes and imposts attending such changes. To these causes may be added, a decaying state of commerce, and a faulty

system of arrangement between the landlords and the cultivators of the soil; all tending to depress agriculture, and to reduce the peasantry at large to a state of much misery and privation.

The ordinary diet of these people consists chiefly of maize, prepared in various ways; of rice, millet, beans, and some other articles of vegetable food. Their bread, which is principally made from maize, is for the most part of bad quality; ill fermented, and not unfrequently deficient in salt. Animal food rarely forms a part of their diet; and though living on a soil which produces wine, their poverty almost precludes the use of it, even when sickness and debility render it most needful. The same condition of poverty is evident in their clothing, in their habitations, and in the want of all the minor necessities and comforts of life. The immediate effect of these privations is obvious in the aspect of squalid wretchedness and emaciation, which forms so striking a spectacle at the present time throughout the greater part of Lombardy. I say particularly *at the present time*; because whatever may have been the progress of misery among the peasants of this country during the last half century, it appears to have increased in a tenfold ratio, during the last two years; the effect of bad harvests added to the preceding wars and political changes which have distressed this part of Italy.

This general condition of the peasants of Lombardy seems to be the cause to which we may most reasonably attribute the prevalence of the pellagra amongst them. Their bad and deficient diet may be presumed to produce a cachectic habit of body; manifesting itself progressively in the cutaneous eruption, in muscular debility, and in a general lesion of the nervous system; including the senses, and the mental faculties. I am aware, that I am here using very general phrases; but it will be readily admitted, I believe, that the state of our knowledge as to the causes of disease, does not often admit of others more definite; and though I might cite various speculations which the writers on pellagra have adopted, founded chiefly on the doctrines of the humoral pathology, yet I refrain from this, under the conviction that they have added little or nothing to our real knowledge of the subject. The general fact



that a deficiency of good nourishment and other means of comfortable subsistence, is capable of producing constitutional disease, is attested by numerous analogous instances. The scurvy may be mentioned as one closely allied in several respects, though differing from the pellagra, as well in its symptoms, as in the particular nature of the diet, which appears to have effect in producing the disorder. Other forms of disease, more closely akin to the pellagra, I have observed in Iceland; connected apparently with the diet and mode of life of the inhabitants of that island. Some of these I have described in a Thesis on the diseases prevailing among the Icelanders, published in 1811. Here too it may be remarked, that the peculiarity of diet is of different kind; and that the points of similarity of condition are chiefly such as relate to general privation and want of cleanliness; causes which appear to have more effect in producing the diseases of this class, scurvy perhaps not excepted, than any of those peculiarities of animal or vegetable food, which are usually alleged and insisted upon by medical authors.

The pellagrous habit of body, however produced among the peasants of Lombardy, is certainly continued and extended by the hereditary tendency of the disease. I have already mentioned the fact of its occasionally appearing in infants at the breast; and though this, perhaps, is comparatively rare, yet it seldom happens that the children of pellagrosi escape the disorder as they proceed in life, and are exposed to what appear to be the exciting causes of the complaint. The early occurrence of the Pellagra, if the disease depends upon bad and deficient diet, might indeed very reasonably be expected. The mother, sickly and emaciated from poverty, is often unable to nurse her offspring; and the substitute for her milk is generally a pulse, prepared from maize and water; the effect of which is very obvious, in disordering the bowels of the infant, impeding nutrition, and preparing the way for future disease. The same circumstances of defective nourishment are continued during childhood, and with similar effect upon the constitution.

Assuming, however, the physical condition of the peasants of Lombardy as the most probable cause of the prevalence of

the pellagra in this district, it may still be asked, why the disease does not equally appear in other countries, where the state of the population is not less miserable? Though there be some difficulty in answering this question, yet on the whole it will probably not be thought inconsistent with medical experience, to suppose that one form of hereditary disease may be accidentally produced in a particular district, and afterwards continued and extended under the influence of the same general causes, which produce other, though analogous maladies, elsewhere. Or if this reasoning be thought vague or improbable, it may perhaps be better to plead ignorance of the local peculiarity; still not relinquishing the opinion before giving as to the general causes of the disease, which can scarcely be doubted, considering the evidence derived from the different circumstances already described.

I may mention here, that several Italian physicians have conceived the increasing use of maize as an article of food, to be much concerned with the extension of the pellagra in this part of Italy, and have thought it probable that the peculiar nature of the disorder might be derived in a great degree from this particular diet. It is a strong objection to this opinion, that the disease, as far as I know, is not observed in other parts of the south of Europe, where the same diet is as generally in use among the lower classes. I have never seen it in the northern parts of Greece, though here the same grain forms a principal article of food with the peasantry of the country; and though I shall afterwards notice a disease occurring in the Asturias, which has some resemblance to the pellagra, yet with this exception, I do not know of its existence in Spain or Portugal, where the maize is very extensively used. The same objection may be made to the idea suggested by some physicians, that the increasing use of rice in Lombardy has been a principal cause of the disorder. It is true that quotations might be obtained from different medical writers, stating the noxious effects of warm rice, as an article of food, in producing nervous affections, blindness, &c.; but even were we to admit much of this, there would still remain a wide disproportion between the alleged cause, and the extent of the effects, as they appear in the pellagra of Lombardy. It may



further be noticed that the use of rice was common in Italy in former times, as we find from the testimony of Horace and Pliny, without the production, as far as we know, of any malady corresponding to that now under consideration. If the cultivation of rice in Lombardy has any connexion with the pellagra, it is probably much less from its effects as an article of food, than from the swampy nature of the districts in which it is most successfully grown. In allusion to this circumstance, however, I have already noticed the fact, which seems to be established, that the pellagra is most frequent in some of the higher parts of Lombardy; and though the unhealthy influence of a marshy surface in this climate, is well understood from experience, yet it would seem that the diseases depending specifically on this cause, are very different in character, from the one I have just been describing.

On the whole, it is certainly to the leprosy or elephantiasis of the middle or dark ages, that we are to look for the nearest resemblance to the pellagra, both in the character and probable causes of the disease. Whatever be the doubt as to the correct application of these terms, and however various the disorders that were admitted into lazarettoes, it is clear that certain diseases were very prevalent in Europe at that period, attended with scaly or tubercular eruptions, or occasionally with both; and bringing on great debility, defect of the senses, and other constitutional symptoms. It appears equally probable that these diseases had their origin, and were continued, by the condition of the European nations at the time in question; when bad governments, imperfect agriculture, and numerous internal wars, had the effect of producing occasional famine and much habitual distress among the lower classes. It is true that we do not find the description of any of these forms of disease exactly corresponding with the pellagra; but the analogy is nevertheless sufficiently close, to warrant us in presuming the same general causes, where the circumstances and effects are so far alike.

I must not quit the subject of the causes of the pellagra, without alluding again to a remarkable fact in the history of the disease; viz. the first appearance of the symptoms in the spring of the year; their partial disappearance in the autumn;

their renewal in the ensuing spring; and the continuance of this alternation for successive years, whenever the disease is protracted thus long, without reaching its latter stages. The generality of this fact, and the further circumstance of the eruption chiefly appearing on those parts of the body which are exposed to the sun, have led some physicians to suppose that *insolation* was the actual cause of the disease. Albera, one of the writers on the pellagra, describes it in the title of his work, as *malattia dell insolato di primavera, volgarmente detta la Pellagra*. Frapolli, after stating various arguments in support of this opinion, asks the question "*Nonne satis evidens et unica causa insolatio?*" and proceeds to give a laborious hypothesis, illustrating its mode of action upon the body. It is obvious from his reasoning on the subject, that he does not sufficiently distinguish between remote and exciting causes. It may be admitted as very probable that insolation is one of the exciting causes of the Pellagra, and that in part at least it determines the appearance and violence of the disease during the spring and summer. But it is certain that exposure to the sun cannot produce the disease, or bring it to its termination, when produced; the obvious proof of which is that the same, or a greater exposure, is incurred by the peasants in every part of Italy, without any similar effects resulting from it; to say nothing of the still more extensive negative evidence to this effect derived from other countries. It may further be presumed that insolation is by no means the sole exciting cause, which determines the appearance of the symptoms in the spring. It seems probable that something of this effect is owing to the increased labours of the peasantry at this season; which cause, though it seems slight and ordinary, yet may reasonably be supposed to have some influence, where the disease is already in the habit, and prepared to manifest itself. Perhaps also it might be surmised, that the periodical returns of the pellagra, during its early stages, depend in part on the natural periodical changes of the body itself, independently of the external causes just alluded to; but this is a topic too extensive, as well as too obscure, to admit of my entering upon it here\*.

\* It may be noticed that Alibert describes a variety of the disease, which



With respect to the medical treatment of the Pellagra, I have much less to say than might perhaps be expected from the preceding history of the disease. The truth is, that in a malady, thus extensively prevalent among the lower classes, and depending chiefly, as it would seem, on their diet and mode of life, no ordinary methods of cure can be adopted with a reasonable prospect of success; the evil requiring those more general preventive means, which it is out of the power of medicine to afford. By far the greater proportion of patients affected with Pellagra are unable to obtain admission into the hospitals of the country; the number and finances of which are wholly inadequate to the demands from this source. Their poverty equally precludes medical assistance in their own habitations, or the changes in diet, &c. which are essential to their relief. Those who obtain admission into the hospitals, generally come there after the disease has already made much progress in the constitution; and even in the cases where benefit has been derived from this change in the mode of life, it is speedily lost again by the necessity of returning to their own houses and former occupations. The only considerable establishment, as I know, set on foot expressly for the reception of *Pellagrosi*, was that, before alluded to, at Legnano, in the Milanese territory. It was abolished, however, five years after its institution, by the Emperor Joseph II.; and in lieu of it, a provision was made for receiving a certain number of *Pellagrosi* into each one of the principal hospitals throughout the duchy of Milan; the funds of the former establishment being applied to this object. Only sixty patients could be received into the hospital at Legnano. The present plan of distribution supports a greater number; but nevertheless appears to have done little in mitigating the evil, either by cures actually performed, or by suggesting any more extensive and radical means of obviating the disease. In 1786, the Patriotic Society of Milan proposed a premium for the best treatise on

he calls *Ichthyosis, Pellagra orbicularis*, from the desquamation taking place in circular patches; in which the pellagrous eruption does not appear to take place precisely on parts of the body exposed to the sun, and occurs indifferently at any time of the year. It is very likely that such a variety may exist, though it does not happen that I have heard it described.

the history, prevention and treatment of the Pellagra; but equally without obtaining any results of the least practical value. It is not a light task to remove causes which affect a whole community of people; and rarely can such object be accomplishing by any sudden or artificial means; even though governments engage themselves in pursuing it.

The actual medical treatment of the cases of Pellagra brought into the hospital, may be very briefly described. A nutritious diet is immediately adopted for the patient, unless contra-indicated by some local affection, and wine and tonic medicines are given with the same view. A decoction of the lichen islandicus is in common use in the hospital of Milan, as a part of this plan of diet. The warm bath is generally employed at the same time; a favourite remedy among the peasantry afflicted with the Pellagra, probably in consequence of its comparative cheapness; but esteemed also by most of the medical practitioners, who are concerned in treating the disease. Diaphoretics, and especially antimonial, are in considerable use; under the idea of correcting the state of the skin, and getting rid of the morbid humours through this channel. Depletion by blood-letting is very rarely employed, except where some local inflammation happens to occur, or in the mania which sometimes supervenes upon the disease. Attention is of course paid to the bowels; in correcting the diarrhœa, and bringing them as far as possible to a natural state. Antiscorbutic medicines are occasionally used; but I did not find reason to believe, from the inquiries I made, that they were of much avail. In short, it appears certain, that mere medicine has done very little for the relief of Pellagra; and Strambi, whom I have before mentioned as the inspector of the hospital at Legnano, frankly confesses that he never saw a case distinctly cured by the remedies that were employed. It is true that Frapolli speaks of numerous cures that have been obtained by the conjoint use of the warm bath, frictions, and sudorific medicines; but this assertion does not seem to have acquired much credit with succeeding physicians; and the general acknowledgment is one of inability and failure.

In the course of this paper, I have already noticed several authors who have written upon the Pellagra during the last



half century. To these I may now add the names of Gherardini, Zanetti, Odoardi, Fanzago, and Jansen; the titles of whose respective treatises are given in the subjoined note\*. Those of Fanzago, the professor of medicine at Padua, published successively in 1789 and 1792, may perhaps be considered the most valuable documents as to the history of the Pellagra. I have not had the opportunity of consulting these works since I left Italy; but should I be enabled to procure these thence, which I have some expectation of doing, I shall have the honour to present them to the library of the Society.

Before concluding this paper, I may notice briefly the existence of a disease in the Asturias, which has been described by Thierry†; and which, from its analogy to the Pellagra in many of its symptoms, has been alluded to by several of the writers on the latter disease. The description of Thierry, however, would make it appear, that this malady much more closely resembles the *Lepra Arabum* or elephantiasis; the general relation of which to the Pellagra, I have already had occasion to point out. I am not aware of the peculiar circumstances which produce or maintain this disease in the Asturias; but it is not unlikely that they resemble those which have been already mentioned as the probable causes of the Pellagra of Lombardy; and which appear capable of producing several different forms of constitutional disease, attended with cutaneous eruptions.

\* Della Pellagra Descrizione di Michelle Gherardini. Milano, 1780.

Francisci Zanetti, de morbo, vulgo Pellagra, dissertatio. Nov. Act. Nat. Curios. Tom. VI. Norimb. 1778.

D'una specie particolare di Scorbuto; dissertazione di Jacop. Odoardi Nuova Raccolta d'Opuscoli Scient. &c. Vinezia, 1776.

Memoria sopra la Pellagra del Territorio Padovano, da Francisco Fanzago. Padova, 1789.

Paralleli fra la Pellagra ed alcune malattie, che più lo rassomigliano, del F. Fanzago. Padova, 1792.

W. X. Jansen de Pellagra, morbo in Mediolanensi Ducatu Endemico. Lugduni. 1787.

† Observations de Physique et de Médecine, faites en differens Lieux d'Espagne. Par M. Thierry. Paris, 1791.

*Account of a Large Wen, successfully extirpated*

BY JOHN SYNG DORSEY, M. D.

[From the Transactions of the American Philosophical Society, Vol. 1.  
New Series.]

THE paper which I have the honour of presenting to the Society, contains the history of a steatomatous tumour, of very unusual magnitude, successfully extirpated.

The patient, Julia Richards, a negro woman, from Carlisle, in Pennsylvania, was aged about forty-five years, and enjoyed good health; she was corpulent, but active, until her exertions were restrained by the incumbrance of her tumour.

She stated that it had been first noticed about eighteen years before I saw her;—that it had grown gradually, and had never been painful. When she applied to me, her attitude in walking resembled that of a woman carrying a large and heavy sack. On examination, I found the tumour arising at the upper part of the back, extending equally on both sides; and although pendulous from its weight, yet the root of it was very large. The dimensions were as follow:

Circumference at the neck or narrowest part of the tumour, two feet ten inches.

Circumference at the thickest part, vertically, three feet nine inches.

Circumference horizontally, three feet one inch and a half.

The circumference of the waist, after the wen was removed, was two feet nine and a half inches; so that the narrowest part of the tumour was thicker than the patient's body.

The surface of the tumour was tolerably regular, but very large and numerous veins were seen in various parts of it.

The patient was admitted into the Pennsylvania Hospital, and on the 22d of February, 1815, I proceeded to remove the tumour. Having previously administered an opiate, I placed her, at the suggestion of Dr. Physick, on her face upon the table, fifteen minutes before commencing the operation, and directed assistants to elevate the tumour in such a manner as to empty it as completely as possible of blood; and



I was greatly delighted to perceive the change in the size of the superficial veins, which resulted from this simple expedient; many of them contracted and could not be perceived.

The operation was commenced by external incisions, calculated to preserve skin enough to cover the surface left by the removal of the tumour; and this skin being dissected and turned back, which was the most tedious part of the operation, the tumour, by large and rapid incisions, was detached from its base and removed. It adhered to some of the spinous processes of the vertebræ, and to the muscles and tendons near the spine. The operation occupied twenty-one minutes; and the loss of blood was very trifling.—The skin was found to adapt itself very well to the denuded parts, and was secured by strips of adhesive plaster, compresses and bandages.

The greater part of the sore united by the first intention; no unpleasant symptoms occurred, and the patient was discharged cured, on the 15th April. She is at this time, and has been ever since the operation, perfectly well.

The tumour was found to weigh twenty-five pounds, but when filled with blood, was probably much heavier.

The tumour of Eleanor Fitzgerald, described by Mr. John Bell; and that of a negro woman, published in the Medical Repository of New York, (Vol. III. New Series) were of enormous magnitude, but adherent by small bases. The basis in the present instance was very great, and I am not aware that so large a tumour has been ever before extirpated.

*Remarks.*—The most important practical precept derived from this case, is the influence of position on the circulation of the blood. I once attended an operation on a tumour of comparatively small size, seated on the back, the extirpation of which was found impracticable, in consequence of bleeding from the superficial veins. In the treatment of hemorrhagy from blood-vessels in the extremities, and on certain local inflammations, an elevated position is often found of great importance. I have seen a bleeding from an artery in an aneurismal arm, in which circumstances precluded the use of a ligature or tourniquet, effectually arrested by an elevated posture, the hand being constantly kept in a vertical position.

These remarks, although somewhat digressive, are in my opinion of too much importance to be omitted. The practice of employing position to empty blood-vessels for surgical purposes, in the case alluded to; and others, so far as I know, originated with Dr. Physick; and my own experience has afforded numerous proofs of its value, and convinced me that it has been too much neglected by surgeons.

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*Analysis of the Blue Iron Earth of New Jersey.*

BY THOMAS COOPER, M. D.

[From the Transactions of the American Philosophical Society, Vol. 1. New Series.]

THIS earth is found in many places of New Jersey, not usually of a blue colour when dug up, but acquiring that colour after being exposed to the air. I do not enter into any geological details, because I have reason to believe this part of the subject will occupy the attention of a member of this society, better qualified, from local knowledge, to treat it than I am. I offer to the Society the following experiments, because I think the nature of the substance has been mistaken.

*External Characters.*

1st. It has a moderately deep smalt-blue colour, neither verging toward copper-red, like indigo and Prussian blue; nor toward green, like mountain blue, and blue fluor.

2d. Its appearance to the eye is earthy.

3d. When breathed upon, it gives out a slight earthy odour.

4th. It is moderately hard: when scratched by the point or edge of a common penknife, the streak is bluish and dusty, from the knife penetrating the substance of the stone; but when scratched by the back of the knife, or by the nail, the streak is greyish-white and shining.

5th. It breaks with a fracture somewhat conchoidal.

6th. It adheres to the tongue with some force.

7th. When a drop of oil is poured on it, the colour becomes



black, or of a deep blue, approaching to black: so that it promises to be useful as a pigment.

8th. Its specific gravity is 2,5338.

9th. It absorbs 35 per cent. of water on immersion in that fluid.

*Its Habitudes when exposed to Heat.*

10th. Before the blow-pipe, whether supported by charcoal, or on the bottom of a crucible, it becomes of a brown colour, and then melts into a shining greyish globule, not attractable by the magnet, unless this treatment with charcoal be continued.

11th. When this stone in powder is distilled at a low red heat for an hour in close vessels, with a pneumatic apparatus, no gas is collected, except the common air expelled by rarefaction from the containing vessel; moisture arises, which by means of a cold atmosphere, is condensed into pure water, exhibiting no chemical qualities on dropping a drop of it into muriatic baryta, or diluted tincture of galls. The powder thus distilled, loses from 23 to 24 per cent. when the distillation has been urged.

12th. On calcinating 100 grains in a full red heat for an hour, 80 to 81 grains of a bright brown powder are procured, consisting (as will be seen) partly of the brown-red oxyd of iron, and partly of alumina.

13th. This calcined brown powder, when treated in a crucible with charcoal, or when made into a paste with wax, and burnt three several times, yielded 48 grains of iron, by means of a magnet; and there were left behind, six and a half grains of a powder not acted upon by the magnet. This last, being dissolved in sulphuric acid, diluted, and precipitated by carbonate of ammonia, possessed the common characters of alumina.

14th. When fused in small proportion with potash, for the purpose of discovering the presence of manganese, the trace of green colour was too slight to indicate any appreciable quantity of that substance.

*Its Habitudes with Solvents.*

15th. This stone does not dissolve perceptibly in pure rain

water at the common temperature of the atmosphere; nor does the water in which it has been infused, exhibit any colour when tested by galls, or triple prussiat of potass: nor does it afford any precipitate by carbonat of potass.

16th. The sulphuric, the nitric, and the muriatic acids, dropt on this stone, excite no effervescence; they are diffused on it, and sink into it.

17th. It is not easily dissolved in *sulphuric acid*, without the aid of moderate heat. I used the top of the common ten-plate stove, of about 150° of Fahrenheit; but with heat, and after some hours digestion, it becomes a white mass with this acid; which mass is soluble entirely in boiling water, producing a clear solution; there is no effervescence during the solution.

18th. Having dissolved 50 grains of the stone in sulphuric acid, and diluted the solution with hot water, I added a filtered solution of triple prussiat of potass, made in the common way, by digesting carbonat of potass on Prussian blue, till the latter no longer became discoloured. On continuing to add this while any precipitate appeared, I obtained a quantity of the most intense and beautiful Prussian blue, which, when calcined in a full red heat for an hour, yielded forty grains of red oxyd. The remaining liquor, after filtration, and precipitation by carbonat of ammonia, afforded a precipitate which, when carefully filtered, and moderately dried, weighed about 4 1-2 grains: it was alumina. It weighed less in proportion than the alumina of experiment 13, in consequence of not being so much dried. The quantity thus obtained, of iron and alumina, is probably not quite accurate, owing to the iron contained the triple prussiat: but very near the truth.

19th. This stone when powdered, dissolves in *nitric acid* in the warm atmosphere of a summer's day, after 10 or 12 hours digestion, without residuum.

20th. This nitric solution was evaporated to perfect dryness; the powdered residuum was digested in fresh nitric acid, which was again evaporated to dryness. A third portion of the same acid was now poured on the brown-red powder, and digested on it: about 1-10th was dissolved, as appeared on drying and weighing the residuum. The solution, moderately



diluted and filtered, exhibited but very slight shades of colour with tincture of galls and solution of triple prussiat of potass, so that but a trace of iron was taken up, as was originally presumed and intended: the digestion in nitric acid, and driving it off by heat, being meant for the purpose of oxyding the iron beyond the point of solubility in that acid. The last portion of nitric acid, therefore, took up nothing but the earths. These being precipitated by carbonat of ammonia, afforded about nine per cent. of earth, when dried at the heat of 150 Fahrenheit, and consisted entirely of alumina.

21st. *Muriatic acid* dissolves this stone by heat. The solution is of a brownish-yellow colour. It leaves no residuum.

22d. *Oxalic acid* and oxalat of ammonia, occasion no precipitate from any of these solutions: hence there is no trace of any of the alkaline earths.

*Experiments to discover the Presence of Prussic Acid in this Stone.*

23d. Carbonat of potass digested on the powdered stone, takes away the colour, but does not dissolve the substance. The solution of carbonat of potass so digested on the stone in fine powder, being filtered, produced no blue precipitate when poured into a solution of sulphat of iron.

24th. A piece of this stone, suspended for many hours in a solution of sulphat of iron, diffused no trace of blue colour, either when immersed dry, or moistened with an alkaline solution.

25th. The following experiment was suggested and made for me by Mr. Cloud, who appears to have investigated the properties of palladium more fully than any other chemist. The nitro-muriat of palladium, and the nitro-muriat of gold, are not precipitated by the chromat of potass, but they are precipitated by the prussiats. When the red oxyd of mercury is triturated with Prussian blue, and boiled with water for half an hour, a prussiat of mercury is formed, which occasions a fawn-coloured precipitate, when added even in a very minute portion to the nitro-muriat of palladium: this precipitate is a prussiat of palladium. Red oxyd of mercury was mixed with

the blue earth in fine powder, and water being added to the mixture, was boiled in a sand-bath for more than half an hour, and constantly stirred during the time: when cool, the liquor was filtered and dropped into a nitro-muriatic solution of palladium, but no precipitate appeared.

*Experiments to ascertain the presence of Phosphoric Acid.*

PRELIMINARY OBSERVATIONS.

When the native green phosphat of lead is melted before the flame of the blow-pipe on charcoal, it crystallizes, on cooling, into a polyhedral garnet-like kind of crystallized mass; so does the artificial phosphat of lead, made by adding phosphat of soda to nitrat or acetat of lead; in which case the phosphat of lead precipitates in a dense white powder, speedily and distinctly. These remarks have been made by Klaproth, in his Analysis of the Phosphated Lead Ores.

When nitrat of lead, or acetat of lead, are added to any solution containing phosphoric acid, the solution of lead is instantly decomposed, and a phosphat of lead is formed. Thus, when phosphat of iron, made either directly by solution in phosphoric acid, or by precipitation by phosphat of soda, is dissolved even in small quantity in the nitric acid, this solution is immediately precipitated by any solution of lead: these facts were previously ascertained.

Moreover, solutions of iron in phosphoric acid, were made both directly and by double decomposition, as by precipitating a solution of sulphat of iron by phosphat of soda. The phosphat of iron in both cases, when dried moderately, assumes a slight bluish tinge by exposure to the atmosphere: which may have led to the supposition of this blue stone being phosphat of iron. These previous experiments were made to ascertain the colour of artificial phosphat of iron.

With these facts in view, a solution of the blue iron earth, or stone, was made in pure nitric acid, freed from muriatic acid by nitrat of silver, and from sulphuric acid by nitrat of baryta: precautions which were afterwards found unnecessary for this particular purpose, the common nitric acid of commerce answering sufficiently well. This nitrated solution of the substance under analysis, was mixed gradually with nitrat



of lead, and subsequently in a distinct experiment with acetat of lead. In neither case was there any precipitate produced, as might have been expected to take place, had even a trace of phosphoric acid, combined or uncombined, existed in this nitric solution.

Again, a considerable quantity of the substance in powder, dried, but not discoloured, was rubbed up with about 1-10th of its weight of lamp-black: in another experiment with 1-10th of sulphur; in a third experiment with 1-10th of a mixture of lamp-black and sulphur. The mixed powder was put into bottle-shaped crucibles, having clay stoppers, with a glass tube of about 1-16th of an inch diameter, passing through the stopper. The clay was burned to fit the aperture, and during the experiments the stoppers were also well luted and attended to.—The mixtures were exposed to a gradual heat for half an hour, to dissipate the hygrometrical moisture, if any should remain; the stoppers constantly examined: the heat was gradually increased to a full red, at the close of an hour: during this time a lighted paper was very frequently applied to the orifice of the glass tubes whence the vapours from the blue earth issued, but there was no trace of any thing inflammable to be discovered. Nor was any, the slightest phosphorescence discovered, on dropping the powdered stone on red hot charcoal. Hence I conclude,

1st. That the hard blue earth of New Jersey is probably the same substance with the blue earth of Jamison and Werner, the *fer azuré* of Haüy, and the *fer phosphaté* of Brochant and Brogniart; but it seems to differ somewhat from the smalt-blue fossil of the Vorau, analysed by Klaproth.

2d. That this blue earth of New Jersey, contains neither prussic or phosphoric acid.

3d. That it consists of sub-oxyd of iron, intimately united with about 1-10th of the earth of alum, and 24 per cent. of water, probably in chemical union.

4th. That it contains no perceptible quantity of silica, lime, magnesia, or the other earths.

5th. That its colour may be of vegetable origin, but I cannot venture any probable surmise concerning it.

The crystallized earth of New Jersey, consisting of olive

green crystals, upon a bluish green earthy stone, is very similar in its geological and chemical characters, to the blue earth just described; but as I propose a more perfect analysis of these crystals than I have yet made, I shall say no more about them at present.

THOMAS COOPER.

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*Observations on the treatment of the Venereal Disease, without Mercury.* By G. J. GUTHRIE, ESQ, Deputy inspector of Military Hospitals, Surgeon to the Royal Westminster Infirmary for diseases of the Eye, Lecturer on Surgery, &c.

[From the Medico-Chirurgical Transactions, Vol. VIII. for 1817.]

THERE are no diseases to which the male sex is so very obnoxious as those of the sexual organs, and there are none which have more occupied the attention of surgeons; yet there is not a subject in surgery of equal importance, on which less has been written since the time of Mr. Hunter. We find that those who have had the greatest opportunities of acquiring knowledge, have for the most part refrained from communicating to the public the results of their observations; and that this has arisen rather from the difficulty of the subject than from its being so thoroughly understood as to require no comment, will be immediately acknowledged by every one of discernment and experience. In offering a few observations on the treatment of diseases acquired through promiscuous intercourse, I wish I could think they would elucidate a subject beset with so many difficulties; but the more I consider in which way this may be accomplished, the greater I find the obstacles to be surmounted, except I could at once adopt the opinions of a French anonymous, but very ingenious author\*, "that there is not, nor even was such a disease;" but to this opinion there are equally insurmountable facts to be

\*Sur la non-existence de la Maladie Vénérienne. Paris, 1811.



opposed. Certain however we may be in this subject of intricacies, that the venereal disease has, within these few years, totally altered in many of those properties and effects, which are called specific; or that the greater part of the opinions which have been commonly entertained are erroneous.

In offering these remarks, I beg to be considered as merely giving a few slight sketches of opinions and facts which may be hereafter confirmed, filled up, or even abandoned, as circumstances and further observations may render necessary; and I shall confine myself as much as possible to facts, and enter as little into the consideration of opinions, that are well known and usually entertained.

On the continent in general, little attention is paid to the appearance of primary sores: if a man have had a suspicious connexion, followed by ulcers on the glans penis, or prepuce, or even a gonorrhœa, he is at once declared to be infected with the venereal disease; but this does not lead in general in Italy, or in the south of Europe, to the exhibition of mercury or any other specific. In France, and particularly in Paris, the contrary is the general practice: the patient is placed on the use of the oxymuriate of mercury; and after taking about thirty-two *portions*, in half doses, twice in the day, which generally occupy the same number of days, he is considered free from disease; and this will in most cases be true in all kind of sores which have originated from sexual intercourse; but if the ulcers should not heal in this period, or secondary symptoms supervene, he frequently continues the medicine for an unlimited time. In doing this, the Parisian surgeons are however acquainted with a fact, which has, until very lately, been denied in England, viz. that every kind of ulcer is curable by common means; and M. Cullerier, the first surgeon in the Venereal Hospital at Paris, demonstrates the possibility of doing so every year to his class; but, after the ulcers have healed, he puts each patient through the usual course, to prevent secondary symptoms.

Lagneau\*, the latest French author who has written on the venereal disease, although he acknowledges gonorrhœa

\* *Exposé des Symptomes de la Maladie Vénérienne à Paris, 1815.*



may have a different origin, still endeavours to prove the identity of gonorrhœa and chancres in the greater number of cases of syphilitic affections, from the circumstance of several females having been infected by the same man with both complaints, and the same occurring in several males, from communication with one woman, and he inculcates in consequence the propriety of treating them by mercurial preparations. In Great Britain, they are usually considered as distinct diseases; but in whatever way we are disposed to view the subject, it is hardly possible to reconcile the different facts which have been adduced, without admitting that ulcers will arise on the penis from the matter of gonorrhœa; that gonorrhœa will in turn be caused by the matter of these same ulcers, and that both occur in consequence of promiscuous or uncleanly intercourse. That many of the ulcers produced in this manner will occasionally assume every character of chancre, and cannot be distinguished from it, I am perfectly satisfied of, from repeated observation; but I am equally as certain that a gonorrhœa in men, with the worst appearances and symptoms, can, and often does, arise from irritating causes common to parts free from any specific disease or poison, is not distinguishable from one that has arisen from promiscuous intercourse, and that both complaints are curable in the same way and without mercury. It may be asked, can gonorrhœa, or the ulcers resulting from the matter of gonorrhœa, produce symptoms of constitutional derangement? The evidence of authors is at variance on this subject, and I am inclined to believe, as a general rule, that they do not; although I am by no means disposed to affirm, that they cannot, under particular circumstances of constitution, produce such symptoms; but in allowing that they do sometimes follow, I am much inclined to believe, that they become serious only in consequence of the improper exhibition of mercury; and it is from the cases that have made me allow, that secondary symptoms, such as inflammation and ulceration of the tonsils, and eruptions on the skin, do follow gonorrhœa, that I have also drawn this inference.

In the British empire, surgeons, so far from confounding these complaints, have on the contrary been long accustomed

to make distinctions between the different kinds of ulcers, to which the sexual organs are liable. Mr. Hunter endeavoured to point out the ulcer which he supposed to possess specific qualities, and to be the cause of what are called the secondary symptoms of syphilis; and since his time, the characters he has given have been supposed to be truly diagnostic, and infallible signs of a disease that required a course of mercury for its cure. His opinion has indeed so far regulated the conduct of practitioners in general, that the greater or lesser resemblance of sores to the assemblage of appearances he has described, has decided whether a course of mercury was or was not necessary: it having been taken for granted that mercury was the only cure, that a sore possessing these characters must contaminate the habit generally unless it were prevented by the exhibition of the appropriate remedy, and that it could not be cured without it. That this was, indeed I believe, is, the opinion of the most eminent surgeons in the empire, will not be denied, and I am acquainted with *none* of whose opinions records are preserved, either in their writings or by their pupils, with the exception of Mr. Abernethy, who do not allow, even if they do not support this doctrine.

Although it was supposed that a chancre was the true syphilitic ulcer, when possessing the properties I have mentioned, it was allowed, and the oldest records of surgery confirm the fact, that many other kinds of ulcers arise from promiscuous intercourse, which do not require mercury for their cure. Attempts were then made to distinguish these also; and Mr. Abernethy, Mr. Carmichael, and others, have been very successful in their endeavours. But the matter did not rest here; reference was not made alone to primary ulcers; the different secondary symptoms were also considered, and attempts again made to distinguish those resulting from each particular kind of ulcer. In this manner several diseases, supposed to depend upon different poisons, have been described; which, if they did actually exist, would be much more dangerous than syphilis itself, which all agree in thinking curable by mercury properly exhibited; whilst the other complaints are, at the same stage of the disorder, aggravated by its exhibition.



In consequence of these opinions, it became desirable to ascertain, at an early period, whether an ulcer was a chancre or not; and many surgeons prided themselves on their peculiar talent in distinguishing those ulcers, which absolutely required the use of mercury for their cure, from those that did not; but the value of this prescience will be more duly estimated now that it has been ascertained that every sore, of whatever description it may be, will heal without its use, provided sufficient time be granted, the constitution be good, the patient regular in his mode of living, and that attention be paid to cleanliness and simple dressing, and to keep the patient in a state of quietude.

During the last eighteen months, in the York Hospital, Chelsea, Mr. Dease, Dr. Arthur, Dr. Gordon and myself have been in the habit of treating all cases of ulcers on the penis, whatever form or appearance they might have, by simple mild means; that is, by dry lint, or ointments or lotions for the most part not containing mercury, in order to obviate the objection that might be made to the application of it in any form; and of near one hundred cases which have been treated in this manner, all the ulcers healed without the use of mercury; and among them there were of course many of every description, from the common ulcer, without excavation or induration, to the solitary ulcer possessing the true characteristics of chancre. Since Mr. Rose of the Guards began to treat his people without mercury, and the practice was adopted at the York Hospital, it has been followed at several of the hospital stations, at Dover, Chatham, and Edinburgh, and in different regiments at home and abroad, especially the 57th and the staff corps of cavalry in France. From these hospitals I have seen the reports of near 400 cases more, which have been treated with the same result as far as regards the cure of primary ulcers; each ulcer appears to have run a certain course, which, as to extent, was much the same as in one of the same appearance where mercury was supposed to be necessary; and at an indefinite period of time, to have taken on a healing action, and in the greater number of instances, skinned over rapidly, leaving a mark or depression shewing a loss of substance. With us, where the ulcer had the characteristic ap-



pearances of a chancre, dry lint alone was generally applied to it; where these signs were less prominent, a variety of applications were used, but there were a great number of sores both raised and excavated, on which no application made the least favourable impression for many weeks. They did, however, yield at last to simple means, after remaining for a considerable time nearly in the same state, several of them having become sores of a large size previous to, or in the first days after their admission. If they were ulcers without any very marked appearance, and did not amend in the first fortnight or three weeks, they generally remained for five or seven weeks longer; and the only difference, in this respect, between them and the raised ulcer of the prepuce was, that this often remained for a longer period, and that ulcers, possessing the true characters of chancre, required in general a still longer period for their cure; that is, from six, eight, to ten, twenty, and even in one case twenty six weeks, healing up and ulcerating again on a hardened base. Those that required the greatest length of time, had nothing particular in their appearance that could lead us to distinguish them from others of the same kind that were healed in a shorter period; neither were any of these ulcers followed by a greater number of buboes, nor did they suppurate more frequently than in the same number of cases treated by mercury; on the contrary, the ulcers were not so frequently, on the average, followed by them, neither did they so often suppurate; but this may also be attributed to the antiphlogistic means employed both generally and locally for their relief.

The fact then of the possibility of curing every kind of ulcer on the genitals without mercury seems to be fully established; but the question of time is very important, for I have every reason to be certain from former experience, that almost all these protracted cases would have been cured in one half or even one third of the time, if a moderate course of mercury had been resorted to after common applications had been found to fail; and I have reason to think, from the treatment of other cases, that the duration of many of them might also have been shortened by the regular exhibition of cathartic medicines combined with sudorifics.

The great question however is, were these people, whose ulcers were healed under this treatment, more liable to secondary symptoms than if they had been treated by mercury? According to the opinions commonly entertained, there ought not to be a doubt on the subject; but these opinions have been formed rather on what it was supposed must follow, than on what has been actually observed to follow. From the nature of the service, it has not been possible for us to trace with sufficient exactness the whole of the persons that have been treated in the York Hospital, although many remained for several months under observation; but of the whole treated, only six cases have been noticed in which symptoms strongly resembling those of syphilis made their appearance, although it is possible slighter ones not requiring medical assistance may have occurred. Of these six cases, two had ulcerated throats, combined with eruptions. In one, the papular eruption appeared before two ulcers, one a raised ulcer of the prepuce, the other a chancre on the corona glandis, had healed; one had a syphilitic leprous eruption, and being a private patient, was cured by mercury and the decoct. sarsaparillæ. Another of the same description was cured without either of these remedies.---Five of the six, then, were cured by simple means, such as cathartics, antimonials, sarsaparilla, and the warm bath, and one by the assistance of mercury.

In none of these cases were the bones affected; it is but proper, however, to remark, that several cases were admitted during this period, in which a few mercurial pills had been taken, and the mouth not been affected, and in which the primary symptoms were followed by eruptions both papular and scaly, by ulcers in the throat, by nodes, and in one case by inflammation of the periosteum covering the bones of the nose, and ulceration of the septum nasi, although mercury was resorted to for its cure; but these cases as well as many others of disease in which mercury had been frequently or irregularly used, although cured, are not included in these observations, as the exhibition of even a small quantity of it in the first instance, might be supposed by some to have a certain degree of influence on the symptoms which subsequently appeared. Mr. M'Leod, in the Hospital at Dover, out of fifty



cases treated without mercury, which he has been able to keep in view, has not had a larger proportion of secondary cases than I have. Staff-surgeon Murray, and Mr. Evans of the 57th regiment, and Mr. Brown of the staff corps of cavalry, have been equally successful in France. In the course of twelve months they treated 134 cases, and the proportion of secondary symptoms to the whole number has been under a tenth, and of the same description as my own. In Edinburgh, the result has, in 200 cases, been the same; indeed it has been so generally uniform, as far as I am acquainted, that we cannot doubt that the proportion of secondary cases of syphilis is infinitely less than is commonly supposed; but it is in all probability something greater than the preceding remarks would point out, from the cause I have assigned. It appears singular, that in the secondary cases, the symptoms should all have been of a mild nature, in two instances only affecting the bones. Some of my friends, of great talents and experience, have been induced from this to suppose, that the greater severity of symptoms, which are frequently met with, has been caused by the exhibition of mercury in the first instance, which aggravated the constitutional disease. I am rather disposed to attribute their mildness to the antiphlogistic means resorted to, on the secondary symptoms first showing themselves; because the situations I have filled have afforded me many opportunities of seeing persons suffering from the primary and secondary symptoms at the same time, where they had not taken any medicine to mitigate or impede the progress of the disease; and these were apparently running through their several stages until checked by mercury.

If we refer to Dr. Fergusson's Paper on the Venereal Disease, in the Fourth Volume of the Transactions of the Society, we shall find it stated, that in many cases in which the Portuguese certainly gave no mercury for the cure of primary symptoms, the secondary ones run their usual course even to the loss of the bones of the nose; and I am very willing to confirm a remark he once made to me, that there were more people to be met with in the town of Lisbon, who had suffered that mutilation, than in any other he has seen of the same size; we cannot then doubt that secondary symptoms of the



most serious nature will occasionally follow in particular constitutions.

The Portuguese, in treating all cases of ulcers without mercury, did only what we have been lately doing, and with nearly the same success; suffering considerable delay in the cure of the primary ulcers, and meeting with few cases of secondary symptoms in proportion to the total number treated. It ought, however, to be remarked, that ulcers of a mild character are much more prevalent in Lisbon than in London, because the lower classes of people, and especially females, have an abhorrence of cold water applied to the sexual organs. But independently of this, Dr. Fergusson supposes they did not suffer from secondary symptoms, as they ought to have done according to the ideas we then entertained, because the venereal disease was mitigated by reason of a general and inadequately resisted diffusion of it among them, in consequence of their simple mode of treating it. There is not, however, any more solid foundation for this opinion, which has, I am aware, made a strong impression on many persons in England, than there is for that which is commonly entertained that the disease is more virulent in Portugal than in Great Britain. On this point I can also only agree with Dr. Fergusson to a certain extent. I do not think the disease, which the troops contracted in Portugal, was in the slightest degree more violent than the same kind of complaint at home, neither do I place the least reliance on what has been said by others about a distemper called the Black Lion of Portugal, which I do not believe exists; but I perfectly coincide with him in opinion, that the change from the climate of Great Britain to that of Portugal in the summer, with the different mode of life, does act most powerfully on our northern constitutions, and disposes strongly to inflammatory affections. It is this that rendered the same kind of wounds more dangerous to the British soldiers than to the natives, and it was to this disposition, increased by the greatest irregularity of conduct, and often by intemperance, a vice the natives are not addicted to, that we were indebted for the mutilations which ensued from the venereal disease. If the persons affected had been managed in the manner he has informed us he treated his friend after the

battle of Vimiera, the result would have been, and was in many instances very different; but in many cases of this kind, from the strong tendency to gangrene, which is great in constitutions of this description in warm climates, mercury, bark and wine were unfortunately resorted to, instead of bleeding, and the most vigorous antiphlogistic treatment, and the part affected was destroyed; but I have seen the same thing happen in several hospitals both civil and military even in England. I write on this subject with confidence, because I was with the army during the whole war in the Peninsula, and had for several months together the superintendence of the hospitals in Lisbon, at a later period than Dr. Fergusson alludes to, and when this disease was one object of my particular attention.

I do not then think Mr. Carmichael's opinion, as to the secondary symptoms peculiar to the phagedænic and sloughing ulcer, receives any support from what occurred to the troops in Portugal; because it did not appear that either of them, following sexual intercourse, were dependent on the cause which produced the ulcer. Where many men have had intercourse with the same woman, they have not all had the same complaint, although one of the ulcers so originating has become phagedænic or sloughed; neither has the same woman herself suffered from this distemper. Indeed the nature of an ulcer of either kind must, after a short time, effectually prevent any intercourse; and we often find, that their peculiar characters only appeared after the ulcer has existed for several days. I firmly believe also, that in the greater number of cases of sloughing ulcer, where mercury is not given, no secondary symptoms would appear: and in those cases in which they did appear, I apprehend they would be equally dependent on the state of the constitution, both as to the mode of cure and their destructive characters. In other words, my observations lead me to conclude, that these ulcers do not depend upon a specific poison, but on the state of the constitution under particular excitement; and that when secondary symptoms do occur, they are not dependent on the state of the ulcer; although I am ready to admit, that in a constitution where an ulcer will rapidly become phagedænic, the second-



ary symptoms, when they do occur, may be different to a certain extent from those that follow more simple ulcers, in a healthier habit of body.

An officer, in the years 1800 and 1801, suffered severely from almost all the secondary symptoms of syphilis, such as sore throat, eruptions, and nodes, and recovered under the care of the late Mr. Rush. In the year 1808, he landed with his regiment in Portugal. In April 1809, he contracted, for a third time, an ulcer on the penis, but being obliged to move with his corps he found, at the end of the fourth day's march, that it was inflamed, red, painful, and swelled to thrice its natural size, altogether threatening the loss of the part: but from which misfortune he was saved by perfect quietude, and the most vigorous antiphlogistic measures. Whilst the army were in the lines in front of Lisbon, he again contracted an ulcer, which he concealed, until the increase of the disease obliged him to apply for advice, when he was ordered down to Lisbon. The penis was now in the same state as in April 1809, but instead of resorting to the same means of cure, he rode forty miles into Lisbon without any delay; the consequence was, the penis sloughed. He underwent several courses of mercury, but the ulceration of the penis could not be induced to heal, his health decayed, his throat became sore, and a swelling took place on the back of the hand and on the foot. He was sent to England, but in vain. He lost by ulceration the remainder of the penis, with part of the hand and foot, and at last died from ulceration of the throat, worn out by disease. His military friends said that he died of the Black Lion of Portugal; but it was clearly from the improper treatment in the first instance of a simple disease, that these dreadful consequences were induced; and I have no doubt they would have been brought on at the former period, if he had been treated in the same manner.

Having made these remarks upon the cure of diseases contracted by promiscuous intercourse, without mercury, and shown that they depend upon the state of the constitution for any peculiar malignancy, I may be permitted to revert to a former period when the same class of people were cured of the same diseases by mercury: that is, between the years 1801 and



1809, when surgeon of the 29th regiment; and I rely much on the knowledge acquired in this period, because the regimental surgeon possesses advantages as to ascertaining facts, which are not to be met with in any other walk in life. The persons affected are completely under his control, he can do what he pleases with them without restraint, and he has them under his observation for a number of years, certain that they cannot have a change of opinion, and act contrary to his wishes. In the period to which I have alluded, a great number of persons afflicted with this disease came under my care, they nearly all underwent a moderate course of mercury, provided the ulcers did not assume a healing appearance at the end of a fortnight or three weeks, and I very seldom had a case of secondary syphilis, not even in those who were occasionally from under my inspection. I am not aware of having ever discharged or lost a man in consequence of it; and the worst case I recollect is now a coal-heaver in London, having been discharged the service, on account of a fracture of the arm, and a wound of the scrotum at the battle of Roliça. Later observation has proved, that a great number of these patients would not have had secondary symptoms, if mercury had not been exhibited; it cannot then be supposed that the mercury prevented their occurrence; but if it be not satisfactory on this point, it goes a great way to prove what is almost as interesting, viz. that mercury properly exhibited is not the cause of all the evil which in many cases is attributed to it; for if it were, these people must have given proofs of it, as every case which did not yield to simple means in the course of a fortnight or three weeks, was put upon the use of mercury. If indeed a moderate course of mercury, nay a few pills, could produce all the symptoms which are frequently supposed to arise from it, there are few of us who have lived in warm climates, where nearly all have taken it irregularly for one disease or other incidental to them, that would not be living proofs of it, while the contrary is well known to be the fact. Whether an insufficient course of mercury is more productive of secondary symptoms than no mercury at all I cannot say; but it appears to me, that it is only where mercury is persisted in after it has evidently ceased to do good, when it disagrees with

the constitution, or when it is exhibited at an improper period, or very irregularly, the patient being exposed to wet and cold, that it produces those symptoms usually supposed to depend upon it. The fact I have stated as to the non-occurrence of secondary symptoms in regimental hospitals, where all doubtful cases were treated by mercury, is so positive, that I am certain no regimental surgeon of ability will be found to contradict it; that they did sometimes occur is true, but it was only when the troops were moving and under irregular management that they were numerous, and then only in the general hospitals, where all the stragglers and all the bad or protracted cases were collected. In the half-year ending the 24th of June, near 1400 cases of primary symptoms were treated in the army in France by mercury, and in this period only 14 cases of secondary symptoms occurred. It may be said, many cases had not time to shew themselves; but then it must be recollected that all those of the preceding half-year, which required the same length of time, are included in this number, and render the calculation as correct as any computation of the kind can be. In six regiments in one district in England, 521 cases were treated in 15 months by mercury, and ten cases of secondary symptoms appeared, so that the true average proportion will be between the two, or 1 in 75. I by no means, however, wish to be understood as supposing mercury to have a good effect on all primary sores, possessing or not possessing specific characters. I am perfectly aware of its inutility in many cases, and the two following, which have lately occurred to me, would attest the fact, if the records of surgery were not already sufficient.

A gentleman perceived, after a suspicious connexion, a sore at the orifice of the urethra and two others near the frænum. For these he rubbed in mercurial ointment for five weeks, when his health deteriorating, he applied to me. I told him the two sores near the frænum would heal in a few days; but that the sore at the orifice of the urethra being dependent on situation would not heal for four or five weeks more. As his mouth was affected, I advised him to omit the mercury, and await the result. He followed my advice, and under mild applications the sores healed.



A soldier contracted an ulcer on the prepuce, and came under my care in October, 1816. At the end of five weeks, the ulcer continuing, I put him, at his earnest entreaty, on the use of mercury; his mouth soon became sore, but no amendment took place for several days in the ulcer. Three weeks after the mercury was left off, other sores of the same nature appeared; but all soon healed, with the exception of one which remained stationary. The man was now satisfied mercury would not cure him, and he waited patiently the event of his treatment, until the 18th of January, when he was discharged perfectly well.

In regard to secondary symptoms, it appears that they occur after primary ulcers which have not been cured by mercury; and that they do also occur after a well regulated course of mercury, there is no man of experience will, I believe, deny. Indeed Mr. Hunter, whose accuracy in matters of fact will not be disputed, has left us through his commentator, Dr. Adams, a most interesting case of this nature, where the disease not only affected the first, but also the second order of parts, although mercury was each time properly exhibited for its cure. This case is given as explanatory of Mr. Hunter's doctrine, that if the disposition for the disease be formed, mercury cannot cure it, until it come into action; which, in plain language, means nothing more, than that the disease cannot be prevented in certain constitutions from running its own course, when it may at last be cured.

Now this part of the doctrine, that the disposition cannot be cured until formed, and in action, is denied by many of Mr. Hunter's most enthusiastic admirers; but there is this difficulty on the subject; that we are perfectly uncertain, when a disposition has been formed, if such a thing do ever occur; and it is not a fair inference to conclude we have destroyed it, because it never shows itself in action; it is on the contrary more rational to suppose, that there never was a disposition formed at all. This conjecture may also be more reasonably entertained, now that we are aware, the greater part of these primary ulcers, which were usually supposed to be the original cause of this disposition and action, are not followed by any such effects, except under particular circumstances, with which



we are as totally unacquainted, as we are with the reasons, why one man on pricking his finger in dissecting shall have a chain of abscesses to the axilla, indicating every appearance of being infected by morbid matter, whilst half a dozen others shall in no way suffer, although exposed to the same injury, precisely at the same time, and in the same way; or, why a person, although continually exposed, and under circumstances where such an effect might be reasonably expected, should, perhaps, suffer but once or twice in his life; or why, at another time, he shall suffer in the same manner from the prick of a clean needle through a leather glove, which cannot be supposed to convey any infectious matter.

If we refer to the works of Mr. Hunter, Mr. Abernethy, Mr. Carmichael, and to the recorded opinions of Mr. Pearson and others, we shall find instances of diseases arising from accidental and constitutional causes, but without any kind of primary ulcers; indeed, instances are not wanting, of their having arisen without any sexual intercourse having ever taken place; yet these diseases so much resembled the secondary symptoms of syphilis, that it was only by the history they were supposed not to be syphilitic.

If we inquire how opinions are now formed concerning the secondary symptoms which resemble syphilis; whether from appearances or history, and what is the object of the inquiry; I believe we shall not find a surgeon in London, who values his own opinion, will venture to give one on appearances alone: all refer to history, and the object of that, to both patient and surgeon, is generally to ascertain whether the use of mercury is to be recommended or not. If the history be truly syphilitic according to our notions of cause and effect, mercury is ordered on the supposition of its being the only specific, although it has too frequently disappointed us. If we find, with the very same appearances or nearly so, that the patient has gone through several severe courses of mercury, it is very properly supposed not to be equal to the cure, or that the disease is mercurial, and sarsaparilla, warm bathing, &c. are substituted. If it arise from constitutional causes, and no syphilitic taint can be traced, even at the distance of half a dozen years, a mixed kind of course is generally resorted to.

It may be said that Mr. Hunter's supposed unerring sign of the disease in all its symptoms being progressive, never retrogressive, except mercury be used, is diagnostic of syphilis; but I do not believe this to be a fact; indeed I have already said, all these symptoms are curable without mercury; Dr. Fergusson has given proofs of it in a country where none is used, and where venereal diseases are supposed to be most prevalent; and as the same thing has been recently done in Great Britain and France, I may be excused arguing the point, because it is simply a question of fact. I deny it; but I by no means deny, on the contrary, I affirm, that in all obstinate cases of this description, after the disease is fully formed, that is, after the inflammatory stage has passed by, mercury, so long as it produces a beneficial effect, is the remedy I would use in preference to all others; but the moment this good effect was no longer progressive, that instant I would abandon it until the remedy ceased to exert an improper influence on the constitution; when I might, under certain circumstances and when a change was necessary, resume it.

If we refer to cases of the secondary symptoms of syphilis, pseudo-syphilis, or the cachexia syphiloidea, we find, that in all, a degree of constitutional derangement exists, producing symptoms so much resembling each other, as to render the adoption of a mode of cure dependent on the history of what has been already done; may we not then be induced to suppose, that neither of these states of disease depend on a specific poison circulating in the blood, and exciting particular parts into diseased action, but on a particular irritation dependent more on the state of the constitution than on the nature of the offending cause? It is allowed by all, that the secondary ulcers of syphilis, as they are called, cannot produce primary ones; a proof that the nature of the disease is changed, and that the primary and secondary disease are two distinct things.

As the irritation of a prick in the finger, only produces abscesses and general derangement when the state of the constitution is not good; as derangement of the digestive organs alone may produce in particular cases constitutional symptoms of disease resembling syphilis; as the irritation of a transplanted tooth may do so in the same manner, so am I disposed to believe, that an ulcer or syphilitic chancre produces secondary



symptoms only in particular states of the constitution: but what that state may be, or in what it may differ from a state of health, would be as difficult to describe, as in any of the other instances to which I have alluded.

Mr. Hunter has said; "the venereal matter, when taken into the constitution, produces an irritation which is capable of being continued independent of a continuance of absorption, and the constitution has no power of relief, therefore a lues venerea continues to increase." In adopting then the opinion of secondary symptoms occurring from a peculiar irritation in the constitution, I am not entertaining a new theory, I am only objecting to that part of the old one, which supposes the constitution is unable to recover itself under any circumstances without the aid of mercury; and I do so because I have had proof of it in many instances. But I would by no means imply that it either can or does in every instance: on the contrary, I object only to the opinion of a virus, absolutely requiring a specific medicine, and not to the remedy itself. Let us look upon it in the venereal disease as we regard it in other diseases, to be used only in certain cases, when it agrees with the constitution, and then with moderation and prudence, and we shall hear but seldom of the bad effects which are now so common after its exhibition.

That I may not be misunderstood in the object of this paper, I shall take the liberty of recapitulating those points on which I wish the attention to rest, as the present result of the experiment.

1. Every kind of ulcer of the genitals, of whatever form or appearance, is curable without mercury. This I consider to be established as a fact, from the observation of more than 500 cases which I am acquainted with, exclusive of those treated in the different regiments of guards, and which occurred in consequence of promiscuous intercourse.

2. Secondary symptoms, (and I exclude trifling pains, eruptions, or sore throats,) that have disappeared in a few days, have seldom followed the cure of these ulcers without mercury; and they have upon the whole more frequently followed the raised ulcer of the prepuce than the true characteristic chancre of syphilis affecting the glans penis.



3. The secondary symptoms in the cases alluded to, amounting to one tenth of the whole, and which were treated on the antiphlogistic plan, have hitherto been nearly confined to the first order of parts; that is, the bones have in two cases only been attacked, and they have equally been cured without mercury.

4. As great a length of time has elapsed in many of these cases without the occurrence of secondary symptoms, as is considered satisfactory where mercury has been used, viz. from six to eighteen months.

5. The primary sores were of every description, from the superficial ulcer of the prepuce and glans to the raised ulcer of the prepuce, the excavated ulcer of the glans, and the irritable and sloughing ulcer of these parts. In the inflammatory stage, attended by itching, scabbing, and ulceration, they were treated for the most part by antiphlogistic and mild remedies; in the latter stage, when the ulcers were indolent, whether raised or excavated, by gentle stimulants.

6. The duration of these stages is very different, is often increased by caustic and irritating applications, and is much influenced by surgical discrimination in the local treatment.

7. The last, or indolent stage, often continues for a great length of time, especially in the excavated chancre and raised ulcer of the prepuce; and it appears to me, that in these particular cases a gentle course of mercury, so as slightly to affect the gums, will materially shorten the duration of it, although in others it is occasionally of no service.

8. Although the secondary symptoms do for the most part yield to simple remedies, such as venæsection, sudorifics, the warm bath, sarsaparilla, &c. without much loss of time, that is, in the course of from one to four and six months; yet, as in the primary ulcers, a gentle course of mercury will frequently expedite, and in particular persons and states of constitutions is necessary to effect a cure; and that a repetition of it will even, in some cases, be requisite to render it permanent.

Much satisfactory information is yet to be acquired, many experiments to be instituted, and much patient investigation to be gone through, in the comparative treatment of these dis-

eases with and without mercury, before we can arrive at any fair conclusion on a subject of such great importance. It appears, for the reasons I have already assigned, that it is to the surgeons of regiments we are principally to look for them; and from the attention which is bestowed by Sir James M<sup>c</sup>Grigor, the Director general of the medical department of the army, to this subject, there is every reason to think that much will be done in the course of the next few years. In the mean time, it is not my intention to recommend that the practice should be indiscriminately adopted in private life; but advantage may be taken of the facts I have stated on many occasions, to the essential benefit of the patients. In persons of a strumous habit, in those with whom mercury is known to disagree, in others who are supposed to labour under its effects, or of it and the disease combined, and who imprudently contract ulcers resembling chancres, and to whom a course of mercury might, according to received opinions, be highly detrimental, it must be very satisfactory to know that these ulcers will heal by simple means; and that if they be regular in their mode of life, secondary symptoms may not follow, or if they should, that there is still a probability of their being cured without the use of that remedy, which to these people may prove a greater scourge than the disease for which it is administered.

The facts I have adduced must necessarily lead many to pay greater attention to the nature of the ulcers they continually meet with, and may induce some few to repeat the experiments for their own satisfaction: but, before the practice can become generally useful, the minds of medical men must be better satisfied of its validity, so that a hasty change of opinion may not lead to a material change of proceeding, that the efforts of one man may not be counteracted by the mere opinions of another. But I again repeat, if any one should be disposed to try the method of cure, the effects of which I have noticed, let him constantly bear in mind, that every case so treated, requires as much attention and quietude on the part of the patient, and more attention and discrimination on the part of the surgeon, than when mercury is used for the cure. If any one should suppose, from what I have said, that there is no such a thing as a venereal disease, that the ulcers on the

penis are all common sores, requiring no more care or attention as to diet, exercise, regularity of life, cleanliness, or dressing, than an ulcer on the arm or other part of the same size, occurring from an accidental cause, he will find himself very much mistaken; and the result of his trials will be a more frequent recourse to mercury, and a longer continuance in its exhibition, than is even customary at present.

I beg it may be remarked that I have not given an opinion on, or entered at all into many important points inseparable from a due consideration of the subject; my object has only been to state a few facts, and make some observations on them. If they had been more comprehensive, I should have had to apologize for a volume instead of a paper.



## SELECTED REVIEWS.

*Analysis of Opium, particularly of Morphiwm and Meconic Acid, considered as essential parts of Opium.* By M. SERTUERNER, Pharmacopolist at Eimbeck, in the Kingdom of Hanover\*.

[From the London Medical Repository, for November, 1817.]

"FOURTEEN years have nearly elapsed since M. Derosne, an apothecary at Paris, examined opium, and published the results of his labours in the *Annales de Chimie*, vol. xlv. I was engaged in an analysis of the same substance much about the same time; but the results of our experiments were so different and so contradictory, that the subject has remained undetermined. Little attention has been paid to my Memoir; it was written in a hurry: the quantities were small upon which I had operated; and some persons had repeated my experiments without success. Convinced of the exactness of my labours in general, although undertaken at an inexperienced age, and desirous of removing contradictions, I engaged myself in a second analysis of this singular vegetable substance; and have had the satisfaction of confirming my former observations and making new ones. It will be seen in the sequel, that the method and the observations of M. Derosne in the analysis of opium were not exact; and that he has not discovered the part upon which the efficacy essentially depends; for he has mistaken for this substance, which I call *morphium*, its combination with the *acid of opium*. In making my observations public, I flatter myself that chemists and physicians will derive some benefit from them. They will throw a light upon the characteristics of these two bodies and the constituent parts of opium.

\* Gilbert's *Annalen der Physik*, neue folge, vol. xxv. p. 56.; and *Annales de Chimie et de Physique*, t. v. p. 21.

I believe also that I have enriched chemistry with the knowledge of a new vegetable acid (the meconic acid), and with the discovery of a new alkaline base, morphium. The latter is a very singular substance, and seems to have some resemblance to ammonia, and which, some day, will serve to explain the other salifiable bases. Although my former observations upon opium and its constituent parts are confirmed, there are also some facts which I have found to be different: but I hope to be pardoned my former errors, when my youth and the small quantities operated upon are taken into consideration.

“I. *Of Morphium*.—1. Eight ounces of dried opium were digested in the heat with several portions of distilled water, until it became no longer coloured. After having evaporated the tinctures, we obtained a translucent extract, which became very turbid on diluting it with water; but with the assistance of heat, or by adding a still larger quantity of water, the transparency of the liquor was restored. The aqueous solution of the extract was saturated with an excess of ammonia, and a substance of a greyish-white colour was precipitated, which formed into translucent granular crystals. These crystals, after being washed with several portions of water, are *morphium*, the efficacious part of opium, combined with a little extract and meconic acid, as will be seen in the sequel of this Memoir.

“2. This substance, after being dried, weighed sixteen drachms. It was saturated with diluted sulphuric acid, in slight excess, precipitated afresh with ammonia, and treated several times with this alkali, in order to separate the extract. But as this could not be effected, the precipitate was reduced to an impalpable powder, and treated several times with a little alcohol, which became very much coloured. By this means I obtained nearly eight drachms of nearly colourless morphium.

“3. The small quantity of morphium which was dissolved by the alcohol, was separated by crystallization. The extracted matter which was contained along with the morphium, in the alcohol, as well as in the ammoniacal liquors, was not pure extractive, but a combination of extractive with morphium, of which the latter was the base. It is very soluble in acids and



alcohol; but sparingly so in water. It coloured the salts of iron, green, by means of its extractive, and separated from them a part of the oxide by its morphium. As pure morphium is precipitated from its solution in acids in form of a pearly powder, and since it crystallizes in parallelepipeds with oblique faces, I presumed that it is the extractive, combined with the morphium, which changed its form into an almost cubical grained crystallization. This is confirmed by treating this substance with ammonia, which dissolves a part only of the extractive, as it has something of the nature of an acid, always retaining some of the morphium, and making it difficult to separate them completely. Alcohol finished the separation, and dissolved the extractive which remain with the morphium. There is a very great difference between the extractive matter separated by ammonia and that which is separated by alcohol. The first dissolves in water with great facility, because it contains less of the morphium than the brown substance obtained by means of an alcohol: in the one, extractive predominates; and in the other, morphium. Hence we give the former, by means of an alcoholic solution of morphium, the appearances of a resinous body, in which the morphium predominates and performs the functions of a base. A concentrated aqueous extract of opium always gives these two combinations when treated with ammonia.

“ 4. In order to obtain morphium in its highest state of purity, I dissolved it several times afresh in alcohol, and obtained it, by means of crystallization, entirely colourless, and in regular parallelepipeds with oblique faces. The substance which is obtained by treating opium with alcohol, according to Derosne, crystallizes in prisms, with angles from  $30^{\circ}$  to  $40^{\circ}$ , and reddens in a high degree the solutions of iron.

“ 5. Pure morphium possesses the following properties:—It is colourless, soluble in small quantities in boiling water, very soluble in alcohol and in ether, and may be made much more so by the application of heat. Its solutions, from which it crystallizes in the above-mentioned forms, are very bitter. The aqueous and alcoholic solutions tinge rhubarb paper brown more strongly than turmeric paper, and restore the blue colour of litmus paper after it has been reddened by acids. It



is not ammonia which produces this effect, because pure morphium does not contain any of it, as will be seen in the sequel by treating this substance with caustic potash. It dissolves with facility in the acids, and forms very remarkable neutral salts.

"The *sub-carbanate of morphium* is formed either by exposing morphium to the action of carbonic acid, or by decomposing the solution by sub-carbonate of potash.

"The *carbonate of morphium* crystallizes in short prisms.

"The *acetate of morphium* crystallizes in small rays, and is very soluble.

"The *sulphate of morphium* is very soluble, and crystallizes in ramifications.

"The *muriate of morphium* forms plumose or radiated crystals, and is more sparingly soluble than any of the other salts with morphium; and, if the evaporation be pushed too far, cools into a brilliant silver-white mass.

"The *nitrate of morphium* crystallizes in rays, proceeding from a common centre.

"I have not formed the *meconate of morphium*; but the *sub-meconate* crystallizes in prisms; and I obtained it by treating the aqueous solution of opium with alcohol. A large portion of water is necessary to dissolve it and separate it entirely from opium.

"The *tartrate of morphium* crystallizes in prisms, very similar to those of the preceding salt.

"These different salts formed with morphium appeared to me to be very hurtful to the animal constitution; for, after tasting them, I was always troubled with a head-ache. They are very soluble in water; almost all have a micaceous brilliancy, and very soon effloresce when exposed to the air.

"In the order of salifiable bases, morphium will stand after ammonia, because it is disengaged from all its combinations by this alkali. It will occupy the last place among the alkalies, from which it is distinguished in having less specific gravity, and in being capable of saponifying oxydized oils. It has less affinity for acids than ammonia, and even than magnesia; but it decomposes most of the metallic salts, as the sulphate, the muriate, and the acetate of iron, several of the salts of mercury, lead, and copper.

"The acetate of morhium loses its green colour by means of morhium, and, no doubt, forms with it a triple combination, as with ammonia. It combines with the carbonic acid of the atmosphere and with extractive, as the other salifiable bases.

"Morphium easily melts by the application of heat, and then has some resemblance to melted sulphur: it crystallizes upon cooling. It burns very quickly; and, by heating it in a close apparatus, a blackish resinous substance may be obtained, of a peculiar colour. It combines with sulphur when heated; but is at the same time destroyed, and forms hydro-sulphuric acid. I have not had time to determine exactly the elements of morhium: but there is no doubt that they are oxygen, carbon, and hydrogen; perhaps also azote. The galvanic pile produces little effect upon morhium, even in making use of a globule of mercury. The globule, nevertheless, seemed to enlarge and alter in consistence.

"II. *Of the Effects of Morhium on the Human Body.*—

6. The most remarkable property of morhium is the effect which it produces upon the animal œconomy. That I might ascertain this with exactness, I tried experiments upon myself, as well as upon some other persons, being convinced that experiments made upon the lower animals do not afford any certain results.

"It is necessary to notice in a particular manner the terrible effects of this new body, in order to prevent accidents; for it has been publicly declared that this substance has been given in considerable quantities to several persons without producing any remarkable effect. If it were really morhium that was given in these cases, it would seem that it could not have been dissolved by the gastric juices. My former experiments induce me to mention expressly that this substance should only be given when dissolved in alcohol, or in a little acid; because it is very sparingly soluble in water; and that consequently it cannot be readily acted upon in the stomach without the medium of these liquids. That I might ascertain with exactness my own sensations, I engaged three persons, none of whom were more than seventeen years of age, to take the morhium along with me. But, warned by the effects which I had for-



merly experienced, I gave to each only half a grain, dissolved in half a drachm of alcohol, diluted with some ounces of distilled water. A general redness, which might even be perceived in the eyes, covered the whole body, but particularly the cheeks; and the animal powers seemed to be raised. We then took, half an hour afterwards, another half grain of morphia. The effects already mentioned increased considerably, and we experienced a transitory inclination to vomit, with a sense of stunning in the head. Without waiting the issue of this, we swallowed, a quarter of an hour afterwards, another half a grain of morphia, in coarse powder, with some drops of alcohol, and half an ounce of water. The effect of this was instantaneous upon the three young men; they experienced an acute pain in the stomach, a sense of weakness, with general stiffness, and faintness. I myself experienced similar effects; and, upon lying down, fell into a kind of *dozing reverie*, attended with a sensation of throbbing in the extremities, but chiefly in the arms.

“These evident symptoms of poisoning, and especially the faint state of the young men, occasioned me so much uneasiness, that, without any consideration, I swallowed about six or eight ounces of very strong vinegar, and gave the same quantity to the others. So violent a vomiting succeeded, that one of the young men, of a delicate constitution, and whose stomach was entirely empty, found himself in a very miserable condition. It appeared to me that the vinegar communicated to the morphia this violent emetic property.

“I then gave this young man some carbonate of magnesia, which soon checked the vomiting; and he passed the night in profound sleep. Next day the vomiting returned; but soon ceased upon taking a strong dose of the carbonate of magnesia: but the want of appetite, the constipation, stiffness, and pain in the head and stomach, did not cease for some days.

“So, if we may judge from this rather disagreeable experiment, morphia, even in small doses, is a violent poison. Its combinations with the acids may, perhaps, possess still more powerful effects. I am of opinion that the last half grain had a more energetic action, from arriving in the stomach in a concentrated state, and being there dissolved.



"The other constituent parts of opium do not possess any of the above mentioned properties; and it appears to me that the principal effects of opium depend upon the pure morphium. It belongs to medical men to investigate this subject. Hitherto the combinations of morphium with meconic acid only have been employed. We may also expect efficacious effects in several diseases from the different salts of morphium. From my own experience, I am able to say, that a very violent toothache, which would not yield to opium, gave way upon the application of a weak alcohol solution of morphium.

"The meconate of morphium, which constitutes the efficacious part of opium, being rather insoluble in water, pure alcohol only ought to be employed for making the tinctures of opium. These tinctures ought also never to be cooled too much; because, when this is the case, morphium, combined with some of the resinous parts, is precipitated from the extractive and the meconic acid; and hence such remedies are less efficacious at a very low, than at a moderate temperature. It would be desirable that medical men, competent for the task, would soon engage themselves upon this subject; because opium is one of our most powerful remedies.

"III. *Of the Acid of Opium or Meconic Acid.*—7. Having shown the properties of morphium, we will now examine the liquid from which it was precipitated by the ammonia. After having evaporated it to the consistence of a syrup, a little morphium in irregular crystals was deposited. Ammonia caused a precipitate, which was almost entirely morphium, but which is dissolved in the extractive if the ammonia be disengaged by heat. This extractive has the characters of acidity; but it cannot retain ammonia at an elevated temperature, and combines with morphium; which combination we shall shortly notice. After having evaporated a little morphium by an excess of ammonia, the extract of opium was filtered, dissolved in distilled water, the ammonia disengaged by heat, and a solution of muriate of barytes added until there ceased to be any precipitate. The precipitate, washed and dried, weighed six drachms. It is a quadruple combination of barytes, morphium, meconic acid, and extractive, sparingly soluble in water.

"8. I endeavoured to separate the morphium from the

extractive by means of alcohol, and to leave the meconic acid pure in the liquid, by saturating the barytes with a sufficient quantity of sulphuric acid. I succeeded in obtaining the meconic acid by evaporation; but, as it was coloured, I was obliged to subject it to sublimation. It melted first in its water of crystallization, and then sublimed in fine long needles. It was colourless, of an acid taste, had all the properties of the strong acids, and distinguished itself by its strong affinity for the oxide of iron, which it precipitated from its muriatic solution, of a cherry-red colour, even when there was a slight excess of acid. But it did not indicate the presence of iron in the ferrugineous prussiate of potass, as I had at first thought, from being deceived by the high colour of the acid which I had employed. The apparatus unfortunately burst during the sublimation, and the small quantity of acid which I had obtained was by this means still more diminished, so that I was prevented from examining the salts which it formed with the different bases. I combined it only with lime, forming the meconate of lime, which is an acid salt, crystallizes in prisms, is rather insoluble, and is not decomposed by sulphuric acid.

“ The meconic acid does not produce any sensible effect upon the human body. I have taken five grains of it without experiencing any inconvenience. It appears to me, that it weakens the effects of opium, and renders it more soluble in water, as indeed do all the acids; and I am of opinion, that this property of the acids is owing to their forming salts with morphia with an excess of acid; but we nevertheless find, that the other salifiable bases are often more hurtful to life in combination with the acids, than when taken in their simple state; and perhaps this may be the case with the salts of morphia.

“ 9. The liquid from which I had separated the morphia and the meconic acid was tinged of a red colour by the muriate of iron and by sulphuric acid. By evaporating it to the consistence of syrup, I obtained forty grains of a rather insoluble salt, from which I separated a little morphia by means of alcohol, which had been dissolved by the water and was precipitated during the evaporation. By treating this salt with sulphuric acid, a sulphate of barytes and meconic acid were



formed; this salt, therefore, must have been meconate of barytes.

“ IV. *Of the other parts soluble in water.*—10. Alcohol having dissolved so little of the morphia from the quadruple combination, I thought it must have been retained by the extractive; and indeed the extract from which I had separated the meconate of barytes, after being diluted with water, and evaporated to the consistence of syrup, precipitated about thirty grains of a mass, which I recognised for a combination of extractive with morphia, and which was dissolved by the alcohol, with the exception of a little meconate of barytes which had combined with it. Thinking I had obtained some extractive, I gave ten grains of it, in several doses, to one of my pupils, who soon brought it up by vomiting. A little ammonia formed a slight precipitate in it, which disappeared upon expelling the ammonia by heat. I repeated this experiment several times. The precipitate which was formed in it when cold, by the ammonia, had the properties of morphia, and combined with the extractive when the ammonia was expelled by heat.

“ These results determined me to re-dissolve the extract in water. When this was thickened as usual, I gathered a little of the precipitate by filtration; it had the appearance of morphia with much extractive, it was dissolved by alcohol, and there were some crystalline traces of morphia. When I added the ammonia in excess, the precipitate was very copious, and almost the whole mass became ductile and resinous; which, in a dose of five grains, produced the same effects as the extract of opium, only in a smaller degree. This substance was very little soluble in cold water; it decomposed the metallic salts like morphia; it was soluble in the acids by saturating them, and ammonia, which dissolved a good deal of it, deposited a greyish mass, which was morphia combined with a little extractive. I endeavoured to precipitate the extractive with the morphia by means of sub-acetate of lead, and to separate the morphia from it by means of alcohol; but I obtained only a little morphia, coloured by the extractive; the remainder seemed to me to have formed a triple combination. When I had decomposed the precipitate with sulphuric acid, the extract



still possessed its hurtful influence, and, by the addition of ammonia, showed the presence of a resinous substance. It seems to me, that morphia has a great affinity for extractive which is perhaps highly oxidized, and forms different combinations with it; one containing a great deal of morphia, of which the crystals mentioned above are formed; the other containing a good deal of extractive, which is precipitated by the ammonia like a resinous substance, from the extract of opium separated from its acid and from the morphia which was dissolved in it. Although the oxidized extractive was combined in excess with the morphia, the combination, nevertheless, possessed its principal properties; it was little soluble in water, very soluble in alcohol and the acids; it saturated the latter, and was precipitated by ammonia, which, combining with the excess of extractive, formed a substance soluble in water. The extractive, however, which combines with the ammonia, still contains morphia. I confess that I ought to have attempted still more to have separated the morphia completely from it by means of æther, the oil of turpentine, or *concentrated alcohol*.

“ A combination of extractive with morphia may be formed artificially, by dissolving the morphia with alcohol and treating it with the extractive of some other substance. It belongs to the properties of morphia and of extractive of combining together, because one possesses the character of a base, and the other of an acid.

“ V. *Of the parts which are not soluble in water.*—11. Not having digested sufficiently the opium in water, I presumed that the remainder of the opium still contained morphia and meconic acid. I treated it with half an ounce of weak muriatic acid and a sufficient quantity of water. After having filtered the liquor, I added ammonia to it. I obtained, without counting what remained in the liquid, about two drachms of morphia, combined with a good deal of extractive and a pulverulent substance. The ammonia which had been added in excess was disengaged by heat. The liquid, treated with a solution of muriate of barytes, gave by evaporation a small quantity of meconate of barytes.

“12. The residue from which the extractive, morphia, and the meconic acid, had been separated, by means of water and

of muriatic acid, weighed one ounce five drachms; it was almost clammy. I treated it with alcohol until it was no longer coloured. By adding water and distilling the alcohol, I obtained a brown substance, which had the appearance of a balsam, swam upon water, and was almost insoluble in alcohol. It had the odour of fish dried in smoke, and the taste of fat; it burned with a flame, which deposited a great deal of soot; and did not produce any effect upon me or other persons, even in doses of twenty grains. A small dog swallowed some drachms of it without experiencing any pernicious effects. I digested one part of this residue with oil of turpentine, and another with sulphuric æther; and I obtained, by the evaporation of the solvents, a kind of caoutchouc, which appeared to me still to retain a little of the brown substance, especially that which I had obtained by the essence of turpentine. By treating the residue of the opium, deprived of all the soluble parts, with diluted sulphuric acid, I changed it into a mucous substance.

“ VI. *Results afforded by the treatment of opium with cold water.*—13. As heat might have had some influence upon the results of my experiments, and not having as yet explained all that Derosne says of opium, I varied them in the following manner. 1000 grains of powdered opium were triturated in a porcelain mortar with small quantities of cold water, which was added at several distinct times. After some hours the liquor was filtered, the opium strongly pressed, and this treatment was continued until the water appeared colourless. This very diluted aqueous tincture, evaporated very slowly, gave an extract different from the first, in not being at all disturbed upon the addition of water. But ammonia and the ferruginous salts equally indicating the presence of meconate of morphium, I think that it is an acid combination of these two new bodies, because the tincture of litmus was reddened by it. Alcohol does not decompose this salt; extractive is dissolved in it.

“ 14. The opium extracted by cold water was boiled for a quarter of an hour in a little water. The filtered liquor became very thick upon cooling, and had the appearance of a decoction of cinchona, though not so high coloured, and acted like the sub-meconate of morphium combined with a little



extractive. It was deposited upon the sides of the vessel in the form of a brownish mass, in which, after some time, prismatic crystals of meconate of morphia were produced.

" 15. The residue was digested with alcohol at an elevated temperature. The brownish liquor filtered deposited, after having been cooled to 5° C., the salt described by Derosne. This salt, by means of its morphia, restores the colour of reddened litmus paper, and has a weak action upon the ferruginous salts by its meconic acid. At the same time there was deposited at the bottom of the vessel a coloured substance, which, when treated with alcohol, gave a little sub-meconate of morphia. The residue, which was very soluble in alcohol but almost insoluble in water, contained the combination of morphia with the extractive and the brown substance, which has been mentioned before (12). The combination of morphia with extractive is distinguished from resins by this property; also the extractive can be separated from it only with difficulty. Ammonia dissolves still less of it, and diminishes its solubility in water. The remainder, treated once more with alcohol, gave a coloured tincture, which was much thickened by adding water, and did not regain its transparency upon the addition of acetic acid; hence it follows, that the precipitate comes from an oil. The solution contained so little of the combination mentioned above, that the taste was scarcely bitter.

" 16. It follows from these observations, that cold water dissolves the meconate of morphia with excess of acid, and almost all the extractive; and that the residue contains sub-meconate of morphia, which is rather insoluble in water, with a little extractive, which is easily dissolved by cold alcohol, but is almost all deposited in crystals.

" *Conclusions.*—17. Without noticing the accidental mixtures which have not been taken into account in this place, but of which I have spoken in my former researches, the *crude opium of commerce* is composed of *meconate of morphia* with little acid, which is divided by warm water into *insoluble sub-meconate of morphia* and into *acid meconate of morphia*, very soluble in water; supposing that there are no other vegetable acids intermixed, which may redden the litmus paper. The



extractive, like the morphium, is divided into two portions; of which, one, which is free, dissolves in cold water; the other part, undoubtedly never oxidized, remains in the residue with the sub-meconate of morphium, and forms by digestion with alcohol some sub-meconate of morphium, and a combination of morphium with extractive, almost insoluble in water, but very soluble in the acids.

“Water, when warm, dissolves more morphium than when cold; and morphium is precipitated in the cold from the liquor in combination with a little meconic acid and extractive. The resinous substance and the other constituent parts of opium, have no influence upon its medical virtues; because they are almost insoluble in water as well as in alcohol. Hence there is a great difference between the extract of opium which is prepared with warm water, and that which is prepared with cold; the latter being much more powerful than the former. The tinctures of opium ought to be prepared with pure alcohol, because by it only are the combinations mentioned above dissolved. These tinctures ought not to be kept in places where the temperance is too cold, because some of the salt of morphium will be precipitated. These inconveniences might be obviated by adding a little of the acetic acid, if we were sure that the acetate of morphium possessed the same medical properties as opium, or the meconate of morphium.

“The extract of indigeous poppy-heads prepared with distilled water, gave no signs of morphium when treated with ammonia, even when acetic acid was added. It appears, that this plant contains morphium combined with extractive. I could discover no traces of meconic acid in it. Other chemists who have examined opium, seem to have obtained different results.

“APPENDIX.—I had proceeded thus far in my memoir, when I had occasion to make the following observations upon the preparation of morphium and meconic acid:

“1. Take eight ounces of opium in powder, rub it up with two or three ounces of concentrated acetic acid and a little distilled water; dilute the paste with two or three pounds of cold water, and filter the liquor. This slightly coloured solution con-

tains acetate and meconate of morphia, extractive, and traces of the combination of extractive with morphia.

" 2. Precipitate the morphia with ammonia, and evaporate the liquor to a fourth part; upon its cooling, separate the morphia by filtration, and precipitate the meconate of ammonia by a sufficient quantity of acetate of barytes. Upon evaporating the liquid to dryness, there is still deposited a little meconate of barytes. The extract from which the acetates had been separated by concentrated alcohol, is almost pure extractive. I have taken it in a dose of ten grains without the least inconvenience.

" 3. The residue (1) contains the combination of extractive in excess with morphia, which is rather insoluble in water. I treated it at several times with sulphuric acid diluted with six parts of water; and I decomposed the acid solution by ammonia. This decomposition was not complete, for there always remains some morphia with an excess of extractive, of brown meconic acid, and a trace of sulphuric acid. This *acid extractive*, or *brown meconic acid*, is without effect: it is morphia which communicates to it its pernicious properties.

" *Conclusions*.—Crude opium then contains *neutral extractive* and *acid extractive*, which both exert no effect upon the animal economy. The latter is combined with morphia; but it combines also with the meconate of morphia, and becomes soluble in water. This combination is decomposed only in part by the water; for the residue contains traces of meconic acid, which, forming a triple combination with a large quantity of morphia and extractive, dissolves in water only by degrees. This is the reason why the extract of opium prepared with cold water, contains only a part of the meconate of morphia, and a little of the combination of morphia with the extractive. By adding acetic acid, this combination loses a part of its morphia; and the meconate of morphia separates from the brown meconate of morphia."



*A Practical Inquiry into the Causes of the frequent Failure of the Operations of Depression and of the Extraction of the Cataract, as usually performed; with the Description of a Series of new and improved Operations, by the Practice of which most of these Causes of Failure may be avoided. Illustrated by tables of the comparative Success of the new and old Modes of Practice.* By Sir WILLIAM ADAMS, Member of the Royal College of Surgeons in London, Oculist Extraordinary to his Royal Highness the Prince Regent, &c. London, 1817.

[From the Annals of Medicine and Surgery, December, 1817.]

PERHAPS no regular oculist acquired in the same short period such high popularity as Sir William Adams, and certainly in the midst of popularity never was any one before so bitterly assailed. Without the assistance of any private interest in either the fashionable or the commercial world, to which, not to merit, too many of our profession owe their elevation, Sir William Adams has worked his way, acquiring friends by his own exertions, from insignificance to the rank of the first oculist of London. But from his very outset he has had constant warfare. First accused of ingratitude by his master, he has been ever since attacked by some one or other in pamphlets, journals, letters, and conversation; called ignorant, ungrateful, illiberal, arrogant, and ten thousand other hard names, for which the great revenue of his practice does not appear to us, with our fine feelings, any thing like a compensation.

Seeing him thus extraordinarily distinguished in two very opposite respects, we may fairly draw two general conclusions, that he must have some degree of professional merit, and that he has some faults of character; that at any rate he must be an industrious man, and that at least he perhaps is over-eager and speaks his mind too freely. We have it however now in our power to decide more minutely—to ascertain whether he has the merit of improvement and originality, and whether his faults are of a darker stain.



The work upon cataract consists of four chapters, of which we purpose to give a full analysis.

I. *History and Nature of Cataract.*—After stating the erroneous opinions of the ancients in regard to the seat of cataract, and the discovery of its real nature in the seventh century, after the celebrated astronomer Kepler had shown the transparency of the lens, the abandonment of this discovery, and the revival of the truth in the beginning of the eighth century; he proceeds to the history of the disease, and mentions an instance, under his own observation, of the complete ossification of the lens. A quotation is given from Pliny (lib. xxv. cap. 13.), which proves, that the ancients applied vegetable matters to the eyes for the purpose of dilating the pupils, previously to the operation of couching. “*Pupillas dilatat, et ideo hoc inunguntur ante, quibus Paraceuthesis sit.*” We could almost wish this remark had come from some other person, rather than our author, who makes it, however, naturally enough, when urging the necessity of dilating the pupil to learn the existence of that species of cataract which depends on the opacity of the posterior part of the capsule of the lens,—a species too frequently mistaken for amaurosis, and entirely unnoticed by many eminent writers,—particularly mentioned in Sir W. Adams’s former work, after the successful treatment of a remarkable case of that kind,—and subsequently spoken of by Mr. Travers.

The belief of Mr. Travers, that the lens is enclosed in a duplicature of the vitreous membrane, he shows to be in opposition to Richter, Janin, Scarpa, De Wenzel the younger, Ware, De Gravers, and Zinn; and contends, from facts which he himself has witnessed, that the lens has a capsule of its own.

“In operations for artificial pupil, performed on two ladies five years ago, the capsule of the crystalline in each was so hard and thick, that, although I had no difficulty in dividing the iris with the artificial pupil knife, yet it made no kind of impression on the capsule of the lens; which, with its contents, became spontaneously depressed below the margin of the pupil as soon as it was detached from the posterior part of the iris. To this time no alteration whatever has taken place ei—

ther in the size or form of these opaque lenses, which certainly proves, that they must be enveloped in the capsulæ propriæ; otherwise, the vitreous tunic being disorganized in a great degree, as shown by the morbidly fluid state of the vitreous humour, admitting of the spontaneous depression of the capsule, they would have long since become dissolved and absorbed.\*

"The very different manner in which the tunica propria of the lens and the tunic of the vitreous body are constituted, conclusively prove that they are totally distinct membranes; for there is no difficulty in injecting the vessels of the former, while, as far as I have been able to learn, no one has ever succeeded in injecting the vessels of the latter. Indeed, without some artificial process, such as boiling, freezing, or putting the vitreous body into acids, the vitreous capsule cannot even be distinctly perceived. Moreover, I can assert, from repeated observations, that in cases where the capsule of the lens has been most dense and thickened by disease, that of the vitreous humour has been either partially or wholly disorganized; thereby showing, that an opposite action had taken place in the two membranes at the same time, and in the same eye. Now, on the contrary, in such cases, were Mr. Travers's opinion correct, we should never find any crystalline lens within the capsule; as the disorganized state of the vitreous humour, consisting in the total dissolution of its capsule, the supposed "duplicature" must become disorganized with the other parts of that membrane, when the lens would necessarily either fall into the anterior chamber or become depressed in the vitreous humour."

We unhesitatingly agree with Sir William Adams.

Four cases of black cataract have occurred to our author; three of which had been pronounced cases of amaurosis by a late celebrated oculist, and on three of which Sir W. A. operated with success.

\* "I have lately seen a very remarkable case, where the capsule, with its lens, became spontaneously separated from its natural adhesions, and has remained in a disorganized vitreous humour, depressed and undissolved, below the axis of vision, for nearly twenty years."



In opposition to Scarpa, he maintains that an experienced oculist would judge very accurately of the species of cataract by the appearance.

Arguments are very successfully adduced to prove that cataract is never to be regarded as the result of an inflammation of the lens, but rather of a want of blood—of a deficiency of vitality. But in this our author has been altogether anticipated by Delpech, who, in his great work reviewed in our fifth Number, in which the whole passage is quoted, argues this point at considerable length, and concludes with the following words: "If these considerations are corroborated at some future period by new and conclusive facts, we should be justified in thinking that the yellow colour of the crystalline is a sign of decrepitude; that the spontaneous cataract of old men is a phenomenon analogous to the falling out of the teeth in old age; and that the spontaneous cataract of young persons is the sign of a kind of anticipated old age, and of a weak constitution of the organs of vision."

After a variety of remarks upon the different kinds of cataract, the impossibility of curing the disease, unless in specific instances, by internal remedies; and the difficulty of knowing whether confirmed amaurosis be conjoined with the cataract; this excellent chapter terminates with the practical rule always observed by the writer.

"It is, and has long since been a rule with me, to advise an operation, whenever a cataract is found to exist, whether complicated with adhesions to the iris or not, if the patient is capable of perceiving light from darkness, and the motion of an opaque body between his eye and the light; for, although I have sometimes been disappointed in my expectations of the result of operations when undertaken under such circumstances, yet, in by far the largest proportion of cases, the attempt has been successful in restoring vision in a greater or less degree.

II. *History and Nature of Depression.*—Depression is described by Celsus; and the native Indians perform it, although, as shown by Dr. Scott, in a different manner. As the inhabitants of India are of much greater antiquity than the Greeks or Romans were, there could be no reason for supposing they



learnt the art from either, even had they operated after the manner of Celsus. They are said to possess the works of Hippocrates, Galen, &c. We need not remark, that the Indians appear to be of the same nation as the ancient Egyptians—the first civilized people of the earth, who carried the division of labour so far, that every disease was treated by different practitioners.

Couching fell into disrepute from its frequent ill success, till Pott, Scarpa, and Hey, revived it. The former, Sir W. shows to have first stated the power of the vitreous and aqueous humours to dissolve the lens when displaced, notwithstanding Professor Scarpa would claim this merit for himself. (*Pott's Works*, vol. iii. p. 157 et seq.)

The following are our author's objections to couching:—

“In the first place, there is no kind of cataract, the nucleus of which is capable of being divided, that is not much more speedily and certainly removed by absorption, when placed in the anterior chamber, than when depressed in the vitreous chamber. 2. When the vitreous humour is in a healthy condition, every depressed cataract is liable, at any time before its dissolution, either to rise and resume its former situation, or to fall into the anterior chamber of the eye; where, from being undivided, it may occasion great pain and suffering to the patient, and even hazard the total destruction of the organ. 3. When a hard and solid cataract, whether its capsule be lacerated or not, is depressed into a disorganized vitreous humour, unless the nucleus be divided, it will remain so long undissolved, as by its weight and pressure on the retina, frequently to cause gutta serena; or by its rolling about, from the motion of the head, and the continual friction on the retina or iris, to occasion such severe pains and inflammation, as to defeat the purpose of the operation, by producing a closure of the pupil, or a suppuration and sinking of the eye.”

These objections are enlarged upon with considerable ability.

III. *History and Nature of Extraction.*—This operation is usually thought modern, but Sir W. gives a quotation upon it from Pliny, and another from Continens Rhasis. Dr. He-

lenus Scott, also, informs him that the native Indians are acquainted with it.

It is objected to, 1. Because inapplicable to children or adults born blind, from their inability to retain the eye fixed; 2. Because the capsule may be opaque, and to extract it, especially if morbidly adherent, is very difficult; 3. Because the cataract may be fluid, in which case, moreover, the capsule is generally opaque; 4. The cornea may be so flat, and the iris so prominent, as to leave no room for the knife; 5. The eye may be too much sunk in the head for the operation; 6. Extraction often causes such violent spasms of the muscles of the eye as force out the vitreous humour, and do such mischief that violent inflammation ensues; 7. If the pupil is large and the lens small, the vitreous humour is very liable to escape; 8. Under the opposite circumstances there is great danger; 9. In hydatid cataract the pupil is so dilated that the pressure of the operation generally forces out the vitreous humour; 10. When the vitreous humour is disorganized, it bursts forth with lens, in most cases, as soon as the cornea is divided; 11. And principally, Under the most advantageous circumstances, the iris may be wounded during the section of the cornea, which indeed cannot always be made of the proper size without difficulty; the wound of the capsule by the kistome or some other instrument, is sometimes difficult, and may be dangerous, from spasm, &c. during its performance; the iris may protrude; the pressure of the last stage of the operation is always hazardous; 12. Many states may be undiscoverable before the operation, and yet highly unfavourable; as adhesion of the capsule to the iris, or of the lens to the inside of the capsule; morbid thickening of the capsule rendering the wound too inconsiderable; a violent contraction of the iris:—these circumstances may render a degree of pressure necessary, which is followed by unpleasant effects at the time, and violent inflammation afterwards; 13. Extraction is occasionally followed by amaurosis; 14. Inflammation often ensues upon the most favourable operations of extraction, sometimes opacity of the capsule and cornea, sloughing, &c. These are all discussed both with great knowledge of nature and ophthalmic works, and great ingenuity.



IV. *Analysis of the Author's New Operations.*— We shall first give the description of Sir W.'s operation for solid cataract in children and adults, more extensively applicable and more generally successful, he states and we believe, than any other, ancient or modern.

"Having secured the eye, by making a gentle pressure with the concave speculum, introduced under the upper eyelid, I pass the two-edged needle through the sclerotic coat, about a line behind the iris, with the flat surface parallel to that membrane; it is then carried cautiously through the posterior chamber, without in the slightest degree interfering with the cataract or its capsule. When the point has reached the temporal margin of the pupil, I direct it into the anterior chamber, and carry it on as far as the nasal margin of the pupil, in a line with the transverse diameter of the crystalline lens. I then turn the edge backwards, and with one stroke of the instrument cut in halves both the capsule and cataract. By repeated cuts in different directions, the opaque lens and its capsule are divided in many pieces, and at the same time I take particular care to detach as much of the capsule as possible from its ciliary connexion. As soon as this is accomplished, I turn the instrument in the same direction as when it entered the eye, and, with its flat surface, bring forward into the anterior chamber as many of the fragments as I am able; by these means the upper part of the pupil is frequently left free from opacity. By cutting in pieces the capsule and lens at the same time, not only is capsular cataract generally prevented, but the capsule is also much more easily divided into minute portions than when its contents have been previously removed.

"The needle which I employ in this operation is eight-tenths of an inch long, the thirtieth part of an inch broad, and has a slight degree of convexity through its whole blade, in order to give it sufficient strength to penetrate the coats of the eye without bending. It is spear-pointed, with both edges made as sharp as possible, to the extent of four-tenths of an inch. Above the cutting part it gradually thickens, so as to prevent the escape of the vitreous humour."

The next operation to be considered is that for *capsular* and *adherent capsular* cataract.



"The needle used in this operation, although slightly curved, is much less bent at its point than that recommended by Professor Scarpa; on which account the surgeon can direct the point of it with greater ease and precision, for the purpose of separating minute portions of capsule, when adherent to the iris. In this operation the capsule should be lacerated very freely, as much as its consistence will possibly admit of; but when that membrane is too thickened to enable the operator to accomplish this object, he must then detach it from its ciliary connexion, except at one small part, as I have already described, and afterwards place it out of the axis of vision. In effecting these steps there is less likelihood of wounding the iris, even than in the operation for children and young persons, from the point of the needle, which is introduced at the same distance behind the iris, being somewhat curved, and directed towards the bottom of the eye, the pupil being dilated by the belladonna.

"When the capsule adheres to the iris, constituting '*adherent capsular cataract*,' the operator must proceed more cautiously; otherwise, in liberating the adhesions between the cataract and the iris, the latter membrane may be injured, and thereby give rise to severe inflammation; or should the adhesions be very firm and extensive, a forcible attempt at separation would be likely to detach the iris from the ciliary ligament, and consequently occasion an obliteration of the natural pupil. In this, as in the operation for capsular cataract without adhesions, care must be taken not entirely to detach the capsule from the ciliary processes, as it would float about in the vitreous humour, and probably obstruct the pupil; but on the other hand, if not sufficiently detached, it will be likely, particularly if much thickened, to rise again into its former situation. Should these accidents occur, the evils resulting from them may be avoided; the floating portions may be extracted through a small puncture in the cornea; and, if the capsule should rise, the operator may again introduce the needle through the same puncture in the eye, and detach it still further; or if the return should not take place for some time after the operation, it may be again repeated, and the further detachment effected, as may be necessary.

"In '*adherent lenticular cataract*,' when the pupil is not too much contracted, provided the nucleus of the lens is sufficiently soft to admit of division, I employ the same two-edged needle as in operating for the solid cataract in young persons. Part of the fragments should then be carried through the pupil, with the point of the needle, into the anterior chamber for solution and absorption. In this case, great caution is necessary on the part of the operator, both from the small size of the pupil and from the extensive adhesion of the capsule of the lens to the iris, affording a much smaller area for the action of the needle, and thereby rendering the iris more liable to be cut or punctured with the point of the instrument while dividing the lens; in effecting this division, unless the surgeon proceed with similar caution, the iris is put so much upon the stretch as either to hazard its partial detachment from the ciliary ligament, or to produce a considerable degree of inflammation. By proper care and delicacy in the size of the needle, these dangers may, however, be wholly avoided, and are to be apprehended only when an injudicious degree of force is employed with the instrument. If the pupil be too much contracted for the purposes of vision, the surgeon, instead of using the two-edged needle to cut up the cataract, should, at the first, proceed to the division of the iris, in order to form an artificial pupil, in a manner which will presently be minutely described.

"When the lens is hard and solid, and the pupil sufficiently large to admit of its free passage, I at once convey the lens forwards into the anterior chamber, with the two-edged needle, ready for extraction; but more commonly the pupil requires enlargement before this can be effected. The iris scalpel should in this case be employed at first, with which the iris should be divided transversely full two-thirds of its extent, and the lens afterwards carried through this new opening into the anterior chamber with the point of the same instrument. Should the lens be soft and even transparent, both lens and capsule ought to be cut through and divided, the capsule being always opaque; which would intercept the rays of light equally as if the lens were in the same state.

"In introducing the iris scalpel at the usual distance behind



the iris, its edge should at the first be turned backwards instead of upwards or downwards; by that means the stretching of the aperture in the coats of the eye, which ensues from subsequently turning its edge backwards, as is recommended in the operation for solid cataract in young persons, and also the escape of a portion of the vitreous humour, when partially or wholly disorganized, will be prevented. It is of great importance that this escape should not take place in this particular species of case, for the coats of the eye being thereby rendered flaccid, a sufficient resistance to the action of the knife is not afforded in dividing the iris; whereas, if the operator endeavours to accomplish his object by increasing the degree of pressure upon the instrument, he will detach that membrane from its ciliary ligament, instead of dividing it. It is necessary not only to divide the iris, but either to detach or divide the capsule of the lens to the full extent of the opening of the iris, otherwise its radiated fibres cannot retract the edges of the divided membrane sufficiently distant from each other, to prevent their reunion by the first intention; unless, indeed, some portions of the fragments of the divided lens are interposed between them.

“For the purpose of dividing the iris I introduce the point of the instrument through the coats of the eye, about a line behind that membrane. The point is next brought forward through the iris somewhat more than a line from its temporal ciliary attachment, and cautiously carried through the anterior chamber, until it nearly reaches the inner edge of that membrane, when it should be drawn nearly out of the eye, making gentle pressure with the curved part of the cutting edge of the instrument against the iris, in a line with its transverse diameter. If, in the first attempt, the division of the fibres of the iris is not sufficiently extensive, the point of the knife is to be again carried forward, and similarly withdrawn, until the incision is of a proper length. I take care, however, very freely at the same time to cut the cataract in pieces. Some of these pieces I bring into the anterior chamber, and leave the remaining portions in the newly formed opening of the iris. These act as a plug in preventing its reunion by the first intention, and assist the radiated fibres in keeping the pupil



more extensively open; by the time these fragments are dissolved the iris has lost all disposition, or indeed power, of again contracting, its divided edges having by that time become callous, and being drawn considerably apart by the permanent contraction of the radiated fibres."

We must trouble our readers with one more extract upon the operation performed by Sir W. when the cataract is found too hard to be cut in pieces.

"The eye is first prepared for the operation by the application of belladonna; a very weak solution of which I employ over night. I prefer doing this in consequence of finding it advantageous, while making the opening of the cornea, that the pupil should resume its natural size as soon as the opaque lens has been placed in the anterior chamber, which could not have been the case were the solution of belladonna to be made strong, and applied but a short time before the operation. The first part of the operation should be conducted precisely as if the cataract were of the soft kind, by introducing the two-edged needle through the sclerotica, a line behind the iris, with its flat surface parallel to that membrane. Its point is then to be directed through the posterior chamber, on a line with the transverse diameter of the opaque lens; when its edge should be turned backwards, and a complete division of the capsule and lens be attempted, in the manner which will hereafter be more particularly described. If upon trial the lens be found too hard to admit of an immediate division, the point of the needle should be withdrawn a little, and then carried something below the line of the transverse diameter of the cataract; when, upon making pressure with its flat surface against the latter body, it becomes dislocated, and the upper part tilts forwards through the pupil into the anterior chamber; after which, without any difficulty, it may be entirely carried through the pupil, and with its posterior part turned forwards. When this is effected, the operator, with the point of the needle, taking care, however, not to wound the iris, should lacerate or cut in pieces the remaining part of the capsule throughout the whole extent of the dilated pupil, by which means secondary cataract is certainly avoided, unless an adventitious membrane be formed in consequence of inflammation. Having accom-

plished this important part of the operation, the needle is to be withdrawn, when the operator should proceed to extract the opaque body.

"The patient should now be laid down on a table on his back, with the head somewhat raised, which is a far preferable position to his sitting in a chair; whereas the latter position is the best for executing the primary part of the operation,—the bringing the opaque lens into the anterior chamber. The operator then makes an opening in the temporal margin of the cornea, with a lancet, or double-edged extracting knife. This opening is enlarged, both upwards and downwards, with a small curved knife, in shape and size similar to the probe-pointed knife described by Baron Wenzel, with the button removed, until it is made sufficiently large to admit of the free passage of the lens; through which a small hook is introduced, with its flat surface between the anterior part of the iris and the posterior part of the lens, which should be carried to the centre of the pupil: the curved part is then turned forwards, and the cataract laid firm hold of, when it is extracted without any difficulty."

This last operation Sir W. first performed, and with success, in June 1812. In January 1813, he repeated it upon some Greenwich pensioners, as may be seen in the hospital-books of Greenwich Hospital. This official record of the fact has turned out a favourable circumstance, for in 1814 Mr. Travers published the same operation without any allusion to Sir William Adams, adding, that he had performed it twelve months before. The Greenwich Hospital books sufficiently establish our author's entire claim to the invention, as printed or official dates must always be the test of priority. But Sir W. very sagaciously, though mildly, observes, that he happens to know, that, up to the latter end of 1812, Mr. Travers always performed the old operation of extraction at the London Eye Infirmary; and that one of the Greenwich pensioners, placed under Sir W.'s care, had been operated upon thirteen times by Mr. Travers, and had a cataract still floating in his eye.

For minute information we of course refer to the work itself, which is undoubtedly the best upon the subject, and firm-



ly establishes Sir William Adams's character as the first practitioner in cataract among us.

The proof of the superiority of the new operations invented by our author, is the astonishing success which has hitherto attended them.

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*Canine Pathology, or a full Description of the Diseases of Dogs; with their Causes, Symptoms, and Mode of Cure, &c.*

By DELABERE BLAINE, Veterinary Surgeon, and Professor of Animal Medicine in general. 8vo. pp. 234, London, 1817.

[From the London Medical Repository, for October, 1817.]

IF the nature, the economy, and the habits of the lower animals be objects of interesting inquiry to the naturalist, and their anatomy to the medical philosopher, surely a knowledge of their diseases can neither be unimportant nor unprofitable to the practitioner of the healing art. To one of the morbid affections of the dog, in particular, the attention of the profession has been forcibly impelled, by the awful consequences which result to man from the bite of the animal in that state; but hitherto the disease in the dog which produces that in the man, has been scarcely investigated: although it appears obvious, that the more rational mode of examining into its nature as it attacks man, would be first to trace it from its supposed origin in the dog. But if the examination of the nature of rabies in the dog has been overlooked, still more have the diseases generally affecting this valuable, although humble, companion and servant of our species been neglected; and even the slightest attention to them has been most improperly regarded, not only as a waste of time, but as a professional degradation. As Mr. Blaine must have been at one time susceptible of these impressions, in common with every other member of the profession, we are not surprised that he should now reflect, with "some pride and self-approbation," that he is "the first person in this country who has systematised and brought forward a [the]



regular medical treatment of the diseases of these animals, founded on a knowledge of their anatomy and animal economy;" and we are satisfied that those who peruse his work will not only exonerate him from disgrace, but yield him their thanks; and that his exertions in the cause of the brute creation will secure to him "the approbation of every humane and benevolent mind."

To justify his deviation from the regular track of his profession, and to show that, besides inclination, "the powerful operation of accidental circumstances" led to his adoption of the line of practice which he follows, Mr. Blaine has given a sketch of his professional life in the preface to his volume. We do not conceive it necessary to make any extracts from that narrative; but shall pass on to the Introduction, which contains a slight sketch of the natural history of the dog, and several very interesting anecdotes illustrative of his sagacity and high moral qualities.

Our author agrees with Buffon in supposing that all the tribe of dogs has sprung from one common stock; but, instead of supposing with that great naturalist, that the *sheep dog* was the common parent, he thinks "the species which approaches nearest to the original is the *Asiatic or Indian dog*, eaten by the natives." He conceives the original dog must have been intended to outstrip in speed the animals he preyed upon; hence "the sharp-pointed head, the small upright ears, deep fore quarters, with great length and strength in the hinder ones;" qualities which are eminently possessed by the *Asiatic dog*, who is besides "ferocious, suspicious, watchful, and sleeps lightly;" and further possesses the seeds of generosity, fidelity, and gratitude. Accidental circumstances, change of climate, and artificial causes, are sufficient, in his opinion, to account for all the varieties of form in the tribe; while most of the moral qualities of the animal are altogether the result of cultivation or domestication with man. To illustrate these qualities, many anecdotes, as we have already remarked, are detailed, either from our author's own observations, or on good authority.

Our author commences the proper subject of his work by some general remarks on the effects of remedies on dogs, and the mode of administering them, which convey several facts of

considerable importance to those who, being engaged in experimental inquiries on the effects of poisons or of medicines on the animal economy, choose the dog as the medium of their experiments. Thus we are informed that ten grains of calomel, which is by no means a destructive dose to a human subject, has killed a large pointer; that three drachms of aloes may be taken by some large dogs with impunity; and that it is almost impossible to poison a dog with opium, a drachm producing but little effect; while, in general, the largest dose that can be given is "returned before its narcotic influence is felt." The difficulty of administering substances to dogs has been felt by all experimentalists; and we confess the knowledge of the directions contained in the following paragraphs would frequently have saved us much trouble.

"Place the dog upright on his hind legs, between the knees of a seated person, with his back inwards (a very small dog may be taken altogether into the lap). Apply a napkin round his shoulders, bringing it forwards over the fore legs, by which they become secured from resisting. The mouth being now forced open by the pressure of the fore finger and thumb upon the lips of the upper jaw, the medicine can be conveniently introduced with the other hand, and passed sufficiently far into the throat to ensure its not being returned. The mouth must now be closed, and kept so, until the matter given is seen to pass down. When the animal is too strong to be managed by one person, another assistant is requisite to hold open the mouth; which, if the subject is very refractory, is best effected by a strong piece of tape applied behind the holders or fangs of each jaw.

"The difference of giving liquid and solid medicines is not considerable. A *ball* or *bolus* should be passed completely over the root of the tongue, and dexterously pushed some way backwards and downwards. When a *liquid remedy* is given, if the quantity is more than can be swallowed at one effort, it should be removed from the mouth between each deglutition, or the dog may be strangled. The head should also be completely secured, and a little elevated, to prevent the liquid remedy from again running out.

"Balls of a soft consistence, and those compounded of



nauseous ingredients, should be wrapped in silver or other thin paper, or they occasion so much disgust as to be returned."—p. 4.

This section contains also some excellent remarks on "the intenseness of mental feeling" in the sick dog, and the necessity of attending to its effects, which may be perused with advantage by the majority of medical practitioners. In the observations on the operation of astringents, the fact is stated, that sugar of lead (*plumbi superacetat*), when injected per vaginam in uterine hæmorrhages, to which bitches are liable, "often produces violent colic."

The article *Breeding* contains some curious physiological observations. The effect of the male parent on the progeny, for example, is well illustrated by the fact that bitches, by uniting in their œstrum with any dog, however large, often die in their pupping time "from the excessive size of the puppies." The appearance of the young to either of the parents, however, does not seem to be regulated by any fixed laws; for sometimes the puppies are of a mixed breed, between that of the father and of the mother, when they differ; while occasionally some are of the same breed as the one parent, and some of that of the other: thus a pointer bitch, breeding by a setter dog, will produce some pointers and some setters. We may remark that something analogous to this obtains in the human species; for, occasionally, in the family of a negroe woman, by the same white man, we see some of the children extremely dark, with features closely approximating to those of the African, while the others have the features of the father, and are nearly as fair as European children. Our author is disposed "to think that bitches are capable of superfœtation;" but he does not support his opinion by any very satisfactory reasoning.

*Bronchocele* is a common complaint in some particular breeds of dogs; and Mr. Blaine remarks, "the treatment is not difficult, nor unsuccessful, when early adopted." In the human species the reverse is the case; and we believe we may assert that the internal remedy he recommends, a combination of *burnt sponge* and *nitre*, has failed in the hands of most medical practitioners. We would, nevertheless, recommend a trial of his external application, which is composed of equal parts of



mild mercurial and blistering ointment, and is ordered to be rubbed upon the swelling once a day, "wrapping up the neck with a bandage, to prevent the ointment from being rubbed off:" but as an application to the human skin, it might be advisable to take one part of the blistering ointment only to three of the mercurial.

On the subject of the *Distemper*, our author asserts, that "in England at least, hardly any dog escapes it." The attack commences at no fixed age, but generally before the dog attains his full growth, and seems to depend on a constitutional predisposition. Second attacks are not uncommon; but a third attack is extremely rare. Its symptoms resemble, in some degree, those of violent catarrh in the human species; and, like it, the occasional cause is cold; but it is also contagious, and the danger is in proportion to the youth of the animal. It is now and then attended with a particular eruption, and almost always with diarrhœa and convulsions. The treatment is, vomiting and purging in the commencement, followed by febrifuge medicines and astringents; or, if convulsions be present, by a compound of ether, laudanum, camphor, and ammonia. The fits, when present, are shortened by sprinkling cold water in the face, and by soothing language; the intense-ness of the mental feeling being much augmented while dogs are labouring under this disease.

We would recommend to Mr. Blaine, the trial of inoculating dogs with vaccine lymph, as a preventive from the *distemper*; since, from the experiments of M. Nauche of Paris, (*See Journal de Médecine, Chirurgie et Pharmacie, Mars 1817.*) although not very satisfactorily detailed, yet they afford sufficient reason to suppose, that vaccination in many instances proved a prophylactic against the contagion of this morbid affection, so fatal to the canine race.

*Dropsy*, in most of its varieties of form, is by no means an uncommon complaint in dogs. It is not so frequently idiopathic as in man; but is generally the consequence of some organic affection, as, for example, old asthmas, diseased liver, and obstinate or neglected mange. Tapping has been resorted to by Mr. Blaine, but with as little permanent utility as this operation affords in man; nor have diuretics proved more suc-

cessful. Contrary to what might be expected, *hydatids* are rare in these animals.

The observations on *Feeding* and *Exercise* may be perused with advantage by those who, following sedentary occupations, indulge freely in the luxuries of the table.

Dogs are subject to both acute and chronic *Hepatitis*, as well as *Pneumonia*, *Gastritis*, and *Enteritis*. In all these complaints the practice differs but little from that which is employed in similar affections in the human animal.

The most important article in the volume, and that for which we have chiefly brought it before our readers, is that on Rabies, which, the work being of a peculiar nature, is treated of under the title "*Madness*." The advantages our author possessed for observing this disease in all its bearings, and the morbid changes connected with it, in the system of the dog, have been, perhaps, never before enjoyed by any person; and when we also consider his capability of profiting by the opportunities he enjoyed, the facts he has brought forward become highly interesting and valuable.

Mr. Blaine justly regards the term *hydrophobia*, when applied to designate this disease in the dog, as highly exceptionable; since the animal, "instead of showing any dread of water, in most instances seeks it with avidity, and laps it incessantly." He notices the evils that this opinion has led to, in lulling into dangerous security persons bitten by dogs actually rabid; and in particular, refers to one instance, in which an eminent physician, on being consulted by a person bitten, "recommended that no precautions might be taken," because he was informed the dog could drink.

"His advice," adds our author, "had it been followed, might have caused the death of three persons. Fortunately for them, his opinion was not attended to, and I dissected the wounded parts out of each of them. In five weeks, an unfortunate spaniel, who had been bitten by this same dog, became mad; and in six weeks a horse, bitten by him, became mad also."—p. 99.

It often happens, however, that, from a paralysis of the lower jaw, the dog is unable to swallow the water which he so eagerly laps; but, even in this case, so far from betraying dread or disgust to water, Mr. Blaine remarks, "I have fre-



quently seen the nose thrust up to the eyes into a vessel of cold water, purposely to enjoy the sense of cold occasioned thereby."

Another absurd popular error, combated by our author, is the opinion that the *worming* a dog, which is merely removing the *frænum* from the tongue, "will prevent his becoming rabid at any future time."

As far as the dog is concerned, the term *madness*, although adopted by Mr. Blaine in compliance with general prejudice, is regarded as improper; as in very few instances are the mental faculties much distorted, and the animal recognizes the voice of his master, and is obedient to it, frequently to the last moment of his existence.

"In other animals, however, there is more propriety in the term; for even the peaceable sheep become astonishingly ferocious in this malady. In the rabid horse, the sight is most terrific: I have seen one clear a six-stall stable of racks, mangers standings and posts; and every thing, but the bare walls, was levelled into ruins around him. On the mal-appropriation of this widely diffused term I shall have numerous other occasions of remarking."—p. 102.

Another opinion still, which our author endeavours to controvert, but certainly we think with less force, is that which supposes, that the disease is occasionally bred in the dog who exhibits it; while he maintains "that every rabid dog must have been previously bitten;" and this opinion he grounds "in long experience," and a mature consideration of the subject. Consistent with this doctrine also, he conceives it is "erroneous to suppose, that the disease is more prevalent during summer than in winter." We do not mean to attempt to weaken the force of these remarks; but we must confess we cannot shake off so completely our fostered prejudices as implicitly to adopt them. We are willing to admit, however, that "tradition and error may have implanted these prejudices in our mind in common with that of the public, and that we may find on attentive examination and from experience, that they are wholly without foundation."

Our author's description of the symptoms of rabies is not very methodical; but in our analysis of it we shall endeavour to give it a more perspicuous arrangement.



When a healthy dog is bitten by another which is rabid, the disease seldom shows itself before the third or fourth week after the accident; sometimes the seventh week passes before the symptoms are apparent; and occasionally three or four or more months elapse. Accidental circumstances, however, hasten the attack; as, for example, a long and fatiguing journey; a cold; or, if the animal be a bitch, the presence of the *œstrum*. Something also depends on the part that is lacerated; for when the head has been bitten, the symptoms of rabies sooner appear. The first symptoms are very obscure, and consist chiefly in some peculiarity of manner in the animal; as, for instance, the picking up and swallowing of straws, threads, paper, and many other things that a dog will not eat when he is well: he gnaws also every article within his reach; there is a great predilection for applying the nose to any thing that is cold; and he frequently scratches and bites himself, particularly in the part which was bitten. The appetite is not much impaired, although some cases are attended with sickness; but the taste is often so depraved, that the animal eats his excrement and laps his urine. After a day or two, the dog generally leaves home and roves about, displaying a great antipathy to other animals, particularly his own tribe, and biting every dog that comes near him. He seldom however attempts to bite a man, unless hunted into fury, or otherwise much irritated; but occasionally very little irritates him, such as the merely presenting to him a stick or the foot. The usual meekness of the animal is often conspicuous to the last, particularly to his master; but sometimes, whilst every mark of tractability is displayed, "he will be very likely to turn on a sudden, and snap at the person who is caressing him." When roving about, some dogs are silent; but the majority howl or bark with a very altered tone of voice, which is readily distinguished from that of health. If an affected dog come up to another "little or large, he goes up and smells to him, in the usual way of dogs, and then immediately falls on him, usually giving him one shake only: after which, he commonly trots off again in search of another object. The quickness with which this attack is made, very frequently surprises the bitten dog so much, as to prevent his immediately resenting it: but nothing is more erroneous than the supposition, that a healthy dog instinctively knows a rabid or mad one. I have

watched these attacks in numerous cases, and I have seen the mad dog tumbled over and over, without the least hesitation, by others that he had attacked."—p. 113.

The younger the dog is, the greater is the disposition to rove, the more striking are the symptoms of mental alienation, and he is proportionally wilder and more mischievous. These are the usual symptoms of the disease in the dog; but scarcely two cases are alike in any of the particulars. Our author ascribes this diversity to the parts principally attacked.

"When the inflammation exists most in the bowels, it generally produces an affection of the neck and throat. This affection consists in a trifling enlargement of all the parts around; the tongue hangs out, and is discoloured, and, from a partial paralysis of the muscles of deglutition, there is frequently a difficulty, but never any disinclination to swallowing. In such cases there are also greater heaviness, stupor, and distress, with a marked weakness of the hinder parts. It is this kind, from the dropping of the jaw, that sportsmen are led to call dumb madness; but it is evidently incorrect so to call it, because it is often accompanied with howling.

"On the contrary, when the lungs are the principal seat of the affection, there are usually much more quickness and irritability in the dog's manner. He rather barks, with a hasty and altered tone, than howls. He snaps at passing objects, as flies, and shakes his chain, or the vessels he drinks out of, with seeming violence: but all this is the irritability of a moment; for the voice of his owner will generally quiet him at once. As in some cases, however, both the abdominal and thoracic viscera are nearly equal partakers of the specific inflammation; so these symptomatic appearances are often blended, and appear, though in mitigated degrees, in the same subject."—p. 110.

The eyes are commonly red and suffused in the early stage of the disease, and now and then ulceration of the pupil supervenes. The animal often displays symptoms of uneasiness in the bowels, by gathering straws and applying them to the bowels; and costiveness is always present.

Sportsmen notice two varieties of rabies, which they denominate *dumb* and *raging*. The former is the more common;



and is usually attended with a considerable affection of the mouth and throat.

"To speak anatomically, the whole of the pharynx and larynx are tumified, and the surrounding muscles affected with paralysis. From this cause the lower jaw drops, and is incapable of remaining closely applied to the upper. The tongue becomes also affected with the paralysis, and hangs pendulous without the mouth. A similar torpor apparently pervades the blood vessels of these parts, which become filled with venous blood: the tongue in particular is black, more especially so at the apex or point: sometimes a black stripe extends along the whole extent. The paralysis extends to the back of the œsophagus, from which a great difficulty is frequently experienced in swallowing; but in no instance is any dread of liquids expressed; nor does even the attempt to swallow appear to give pain. The larynx, participating in the affection, occasions a deep choking kind of noise, which seems to issue from the bottom of the glottis.

"Sometimes the mouth is quite dry and parched; at others it is very moist, and a quantity of saliva continually flows from the jaws. When the mouth is affected in this manner, the sufferings of the poor animal are extreme, for his thirst impels him to be continually lapping; but the paralysis of the lower jaw prevents his retaining the liquid in his mouth, and it falls out as fast as taken in."—p. 115.

The duration of the disease varies very considerably. It seldom proves fatal before the third day; but few dogs survive the seventh. The average deaths happen on the fourth and fifth days.

Our author had many opportunities of ascertaining the morbid appearances presented by dissection in dogs affected with this disease, and he has availed himself of them. When there has been much irritability, panting, and disposition to mischief, the brain and its membranes exhibit marks of increased vascularity; and the same is the case with the lungs, one side of which is generally more inflamed than the other; and when the animal has actually died of the disease, the lobes of this viscus are found black and gangrenous. When however there has been a disposition to collect straws, and to place them under



the belly, and to swallow indigestible substances, as hay, rope, wood, coals, &c. the stomach and bowels chiefly are inflamed, and the above enumerated substances are found united, and forming a crude mass in the stomach. This is regarded by our author as one of the most certain evidences of the previous existence of the disease. The mesentery, the liver, and the diaphragm, also occasionally exhibit marks of inflammation; but this Mr. Blaine regards as altogether sympathetic. In the majority of cases, some inflammatory appearances are visible at the posterior part of the mouth, and in the pharynx; and a peculiar inflamed spot, which is highly characteristic of the disease, is always discovered at the back of the fauces.

Mr. Blaine very justly remarks, that neither in the dog nor in the human animal ought we to place much reliance on any method of preventing the disease after the bite has been inflicted, except the part be excised. This can always be effected in man; but in animals it is sometimes difficult to discover the parts that have been bitten; and consequently he was desirous to discover some preventive of the attack; and he is fully persuaded he has accomplished this in the following recipe, which he obtained from "a cottager of the name of Webb, near Watford." We subjoin it, not because we would place much reliance on its efficacy, but that it may be submitted to a fair trial on dogs; for we should be sorry to find the safety of any of our fellow creatures confided to its powers.

"The following, which is an improvement on the original formula, is that which, after much experiment, I find the best method of preparing the remedy:—

Take of the fresh leaves of the tree box...2 ounces

Of the fresh leaves of rue.....2 ounces

Of sage..... half an ounce.

Chop these finely, and, after boiling them in a pint of water to half a pint, strain and press out the liquor. Beat them in a mortar, or otherwise bruise them thoroughly, and boil them again, in a pint of new milk, to half a pint, which press out as before. After this, mix both the boiled liquors, which will form three doses for a human subject. Double this quantity is proper for a horse or cow; two thirds of it is sufficient for a large dog, calf, sheep or hog; half of the quantity is required for a middling

sized dog; and one-third for a small one. These three doses are said to be sufficient, and are directed to be given, one of them every morning fasting. Both the human and brute subject are treated in the same manner, according to the proportions directed.

"In the human subject I have never found it produce any effects whatever but a momentary nausea from disgust. To prevent this disgust operating disadvantageously, the old recipe directs it to be given two or three hours before rising; which is not a bad plan, because it will be less likely to be brought up again by such precaution, which so large and unpleasant a dose might otherwise be. Neither in any animal, except the dog, have I ever witnessed any violent effects from the exhibition of this remedy. In dogs, however, I have frequently seen it produce extreme nausea, panting and distress; in two or three it has even proved fatal: but, as I conceive that it is more likely to be efficacious, when it shows its effects on the constitution; and as, at the same time, it is proper to guard against these effects being too violent: so it is prudent always to begin with a smaller dose than the one prescribed, and to increase it each morning till it shows its activity, by sickness of the stomach, panting, and evident uneasiness. In such cases, perhaps five doses are not too much.

"In a long and successful practice, I have given this remedy to nearly three hundred living beings. About fifty human persons have taken it, eight or nine horses, several sheep, and a few cows and hogs. The rest were dogs; but in almost all I was enabled to trace the history of the danger, to a conviction, that the animal concerned had been bitten by a dog unquestionably mad. Out of this number, I am happy to state, and which I conscientiously and solemnly do, that only nine or ten instances of failure have occurred; but candour obliges me to own, that four or five of these were palpable and fair cases; for the medicine was given *apparently* with every caution."—p. 128.

Our author nevertheless leans as he ought to do to the superior safety of excision; but he thinks "it is of no consequence that the excision or cauterization should be immediately effected; as it is equally efficacious if done at any time previous to the secondary inflammation of the part bitten. We would accord



with this opinion, did we conceive it likely that individuals would as readily submit to excision after some time has elapsed from the infliction of the bite, as directly after it has been inflicted; but as this is not to be expected, we are of opinion that the excision cannot be too soon effected; although it ought not to be left undone, should even some days have passed, under the impression that it is then too late.\*

The only notice we conceive necessary to be taken by us regarding *mange*, which is the subject of the next section, is to mention the idea of our author, that "the canine mange is capable of producing the human itch." We are not prepared to deny the assertion, but we doubt its accuracy; for as very few dogs escape an attack of mange, were it capable of communicating scabies to the human subject, we should find the disease more prevalent than it is, particularly among the lower classes of people, among whom, few families are without a dog.

*Rheumatism* is a disease almost as common to the dog as to man; but in the quadruped it is attended by some peculiarities. Thus in the dog, it is never present without affecting the bowels; and paralysis of the hind legs is also a common accompaniment of the complaint, when it affects the lumbar muscles. The treatment recommended by our author, consists of the internal exhibition of purgatives combined with opium, the use of the warm bath, and the local application of an embrocation composed of oil of turpentine, spirit of hartshorn, laudanum, and sweet oil, in equal proportions.

Dogs are very subject to *tænia*, the *lumbricus teres*, and *ascarides*: they are also troubled with another kind of worm which is not found in the human body, and which Mr. Blaine describes very vaguely, by saying that it has a short body resembling that of a maggot, and a red or black head. There is nothing new in the treatment recommended; but we are surprised that he appears to be ignorant of the effects of oil of turpentine in *tænia*.

We conceive it unnecessary for us to go through the remaining articles of the volume, which are of a nature that renders them interesting to those only who are immediately concerned in the treatment of canine diseases.

\* For our particular opinions on this subject, see *Repository*, vol. iii. p. 47-54.



In concluding, we have only to remark, that in a general point of view, this volume is certainly interesting, as extending the limits of pathology, and affording an illustration of the influence of morbid causes on the animal frame, modified by habit and circumstances. Yet reflecting that our author received a regular medical education, we have been struck with the limited knowledge of physiology it displays; and the few efforts he appears to have made to illuminate many important questions in the doctrines of animal life, compared with the many opportunities he possessed. In a second edition of the work, he may supply this deficiency; and we would also recommend him to improve his style of writing, and to correct the many grammatical inaccuracies that deform the pages of the present.

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*Observations relative to the Use of Belladonna in painful Disorders of the Head and Face; illustrated by many Cases.*  
By JOHN BAILEY, Medical Practitioner, of Harwich.

[From the Annals of Medicine and Surgery, for December, 1817.]

No one is unacquainted with Dr. Marcet's interesting paper on the remarkable anodyne properties of the extract of stramonium, inserted in the sixth volume of the Medico-Chirurgical Transactions, and reviewed in our 5th Number. As we have given a very extensive trial of this medicine, we shall take this opportunity of giving our testimony to its virtues.

We have always employed the extract prepared at Apothecaries' Hall, or Hudson's in the Haymarket. Dr. Marcet recommends beginning with an eighth of a grain, and gradually increasing the dose, if requisite, to one grain or more. In no instance, however, has an eighth of a grain proved at all active with us; and we therefore now commence with one third, and if the pain is violent, with one half a grain, increasing the dose by one third, or one half every day, till the object is attained. Half, or a whole grain, repeated as Dr. Marcet directs, gener-

ally proves sufficient; but we have exhibited it in doses of two, and in one instance, in doses of between five and six grains several times a day. This instance was a case of uterine disease, and the patient found the medicine invaluable; for she had it always in her power to remove or diminish the pain, and without any of those effects which had rendered it impossible for her to persist in the use of opium: in fact, no circumstance accompanied its anodyne effects, except a dryness and heat of the fauces. We have never once found those disagreeable effects which are common to the employment of narcotics, and on account of which some practitioners have spoken against stramonium; such as vertigo, temporary amaurosis, &c. In a case of spasm of the præcordia, we lately gave a young woman, who had not been, like the patient with uterine disease, gradually accustomed to its exhibition, a grain every hour, for eight hours; and to another, suddenly seized with spasm of the diaphragm, three grains in a quarter of an hour, without any unpleasant effect: but as the medicine proved totally inert, from the great violence of the disease in each case, these are scarcely fair instances. It may be observed, by the way, that as a very large dose of some powerful narcotic was deemed requisite in each of these cases, we fixed our reliance upon opium, as being at present better acquainted with it, and gave at once an immense dose with success. In diseases, whose grand feature is pain, we have never failed with stramonium, either to cure, or remarkably palliate. In all cases of neuralgia or *tic douloureux*, even of the most excruciating kind; and in rheumatic head-achs, face-achs, and ear-achs, in chronic rheumatism without swelling, and in wandering pains, our success has been astonishing. In painful inflammatory diseases, we find it much superior to opium, as an adjunct to calomel and antimony. In those distressing cases where medicine and surgery are unavailing, and opium is esteemed the only solace, we have no hesitation in asserting stramonium to be highly superior: with us it has induced no feverishness, no stupor, and, what is of still more consequence to the patient's comfort, no continued and obstinate constipation. Dr. Scudamore has found stramonium in many cases not very effectual, and asserts the superior advantages of combining



lactucarium with it. We suspect he has not given it in sufficient quantity, and that an increased dose would have answered much better than the addition of lactucarium, which is a comparatively inert drug, and has been relinquished at Guy's Hospital, on account of its inertness.

Exactly what Dr. Marcet's paper was in regard to stramonium, is Mr. Bailey's in regard to belladonna. He proves its remarkable property of relieving pain, by the narration of numerous cases; but gave it in such doses as often to induce very unpleasant, although temporary, symptoms; such as amaurosis, swelling and protrusion of the tongue, dryness of the throat, great thirst, suffusion of the eyes, &c. Perhaps these effects might be avoided without impairment of the benefit, by exhibiting it in small and repeated doses, as Dr. Marcet does with stramonium, instead of large doses at long intervals, as Mr. Bailey recommends. The relief in almost every instance was surprising; a cure was effected in many. A few, for the most part accompanied by inflammation and pyrexia, were not benefited, but we have reason to think that the addition of calomel and antimony would have rendered the result different.

We see no necessity for transcribing any of the cases, which were all of a nature well known to every practitioner: suffice it to say, that Mr. Bailey recommends either the Extract of the London Pharmacopœia, in doses of three grains, or from twenty to forty drops of a tincture made by steeping two ounces of the dried leaves in a pint of spirit.

Some cases, also, are related, which show the powers of belladonna over the same diseases in the hands of other practitioners. In a violent example of hysteria, which had withstood all other remedies, its efficacy was indisputable.

Its medical virtues appear very analogous to those of stramonium, and to one or other, or both, we hope many affections, hitherto often irremediable, will now generally yield. We trust that a fair trial will be made of both medicines, in various affections. Their use is by no means new, but their specific powers have not been at all accurately ascertained.

We regret that in giving so interesting a little work to the public, Mr. Bailey has not confined himself to the simple narration of cases, but prefixed many very unnecessary pages.



General practitioners, actively engaged, are not supposed to be generally men of deep reading or cultivated taste; and we must always be grateful to them, and perfectly contented, when they favour us with plain practical novelties. If they attempt more than this, they do but too often spoil the good they give us; and accordingly, Mr. Bailey, to whom we return our best thanks for his important information, really put us, when reading the first quarter of his book, to more pain than all the belladonna upon earth would remove; he, in truth, apologizes repeatedly for his plain learning.

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*An Account of some Experiments made with the Vapour of Boiling Tar in the Cure of Pulmonary Consumption.* By ALEXANDER CRICHTON, M.D. F.R.S. Physician in Ordinary to their Imperial Majesties the Emperor and Dowager-Empress of Russia; Physician in Chief of the Civil Department of the Empire; Knight of the Order of St. Vladimir; Honorary Member of the Imperial Academy of Sciences of St. Petersburg, &c. &c. &c. 8vo. pp. 62. Edinburgh, 1817. Published in French at St. Petersburg last summer.

[From the Annals of Medicine and Surgery, for December, 1817.]

BE not alarmed, gentle reader! be not flurried! your English feelings are not going to be insulted by the offer of instruction from a Tartar. The present pamphlet comes, indeed, from the kingdom of the Huns—the dirty Huns “who stew their meat”—in short, who are mentioned in Hudibras, and whose nasty tricks are so lusciously described by Dr. Clarke. But the writer is one of us, a native of Scotland, and a graduate of Edinburgh, simply settled in Petersburg, and he dedicates his work to Dr. Baillie. Those, therefore, whose wit might have contrived a pun upon tar being recommended by a Tar-tar will be disappointed.

Dr. Crichton confesses his acquaintance with a treatise written above thirty years ago by a Mr. Mudge of Plymouth,

entitled "A Radical and Expeditious Cure for a recent Catarrhus Cough;" the chief object of which is to recommend an inhaler in catarrhal complaints, but in which a case of violent pulmonary suppuration is related, cured by fumigation with common resin twice a day and a residence in the country. Mr. Mudge is uncertain whether the cure could be attributed to the fumigation, which he declares he never found successful in any other case; adding, however, his belief that the principal advantage of sea-voyages to consumptive patients depends upon the tar-vapour constantly present on shipboard.

The immediate cause, however, of the suggestion to Dr. Crichton, is thus detailed:

"In the neighbourhood of a country house which I inhabited last summer, in the vicinity of the Imperial Palace of Kamanoi Ostroff, is a cable manufactory, which I one day went to see, without any other motive than that of taking a walk. In the place where the tar was boiled in large quantity, I found, to my great surprise, that although the vapour affected the eyes painfully, yet I breathed the air with perfect ease. In a kind of magazine adjoining to this, where the vapour and odour of boiling tar were weaker, yet strong, the eyes were not affected; and it immediately struck me, that this artificial atmosphere might be of use to a consumptive patient who lived in the neighbourhood, and whom I had entirely despaired of curing. The proprietor of the cable manufactory immediately consented to the trial being made, and the following results ensued from it."

The patient was thirty-one years of age, with a flattish chest, a delicate constitution, and a pale complexion. He had laboured under inflammatory symptoms of the chest, cough, hæmoptoe, &c. two years; and at this period had a frequent cough, oppression of breathing, very copious purulent expectoration, and colliquative sweats and diarrhœa, with extreme emaciation. He was sinking rapidly.

"The first day he remained in the tar vapour four hours; and in a very short time after entering the room, he says he experienced a sensation of greater ease on his chest. As the weather was hot, and he had no one there to converse with,



he fell asleep, but soon awoke with a head-ach; still the relief in his breathing was so decided, that he resolved to return to the room on the morrow. He continued daily to visit it, always falling asleep, and waking with head-ach. It was not till the expiration of some weeks that the tar vapour ceased to have this effect. During this time, however, the cough and expectoration had gradually diminished, and at the end of a month he had regained his former strength; when, without informing me, he went daily to town, neglected his remedy, and the cough returned. I reproached him for such imprudence, and insisted on his having recourse again to the tar vapour room, which had before been so successful. He returned to it, and continued his daily visits there until the end of one short summer. The beginning of September, the period of quitting the country, he felt perfectly well, and thought his cure complete. I then lost sight of this patient; and it is only to-day, the 27th March, 1817, that I learn, in answer to a letter I addressed to him, that his health has continued good; that he has taken no medicines all the winter; that he has gone out daily on business; but that having very lately a slight return of cough, he has just begun to cause his bed-room to be fumigated at night with the tar."

The efficacy of no medicine could be more decided than in this case, and the next is equally satisfactory.

The subject was a woman, thirty years of age, rather flat chested, thin, and of a livid complexion. For a twelvemonth she had had inflammatory symptoms in the chest; and when she consulted Dr. Crichton she was greatly emaciated, had a constant cough, an abundant expectoration of greenish-yellow matter in every point resembling pus, colliquative sweats, and diarrhœa. No hopes were entertained of her recovery; but a decoction of althæa with a little tincture of opium was prescribed, and the fumigation of her room with tar vapour.

"At first the vapour occasioned head-ach as in the former case; but as she felt considerable relief in her chest, she persisted in the trial of this remedy. She assured me, that without using any other means of cure than those above stated, she found, at the expiration of a week, that her cough and expectoration were much diminished, but that her great weak-



ness prevented her quitting her bed. Her perspiration was also lessened; the diarrhœa had ceased since her use of the decoction of althæa and opium.

Her appetite and strength soon returned, while her cough and expectoration became daily less and less. At length she rose from her bed, and sat up several hours in an arm-chair. From this period her convalescence went on rapidly; all the bad symptoms disappeared, and she regained flesh. Her cough totally left her by the time of my returning into town early in September. In a week afterwards, I heard that she had resumed her former occupations, and felt herself perfectly recovered. From this time, until the 11th of January, 1817, I had heard nothing of her. She then came to tell me she had continued quite well the four last months of the year; that since September she had neither taken medicine nor employed the tar fumigation, but that she now thought she had again caught cold from the dampness of her habitation; that for the last fortnight her former cough and expectoration had returned, and that she already felt much weakened. I prescribed exactly the same treatment as before, and in the month afterwards, I heard with infinite satisfaction from her husband, that she was again recovered."

These remarkable cases encouraged our author to make further trials; and he therefore begged permission of her Imperial Majesty, the Empress Dowager, to pursue these trials in the Hospital for the poor which is under her Imperial Majesty's immediate protection.

The favour was instantly granted, and one ward, containing four or five beds, was appropriated for the trials, which were to be made by two of the hospital physicians, Messrs. Blüher and Roos.

Their report begins by stating, that the easiest and best mode of fumigation is to put the tar in an earthen vessel over a lamp or heated iron, so as to cause a slow volatilization, till the air of the ward is sufficiently impregnated. The process was repeated three or four times a day.

The cases in the report are six, and we shall give a sketch of each, previously advising such of our readers as have not strong teeth, not to attempt pronouncing the names of the patients, but to pass on to the history.

1. Lukeria Niketena, a young widow, ill above a year, had pains in the side, frequent cough, dyspnœa, a hectic, purulent expectoration, and night sweats. The tar fumigations produced, in less than a week, a great diminution of the cough and expectoration, and a remarkable relief in the chest. Her health rapidly improved, and on the twenty-first day, the sweats had ceased; she found herself very comfortable in the fumigated room, but on quitting it or passing into a colder air, she felt her lungs irritated, and coughing was excited. On the twenty-seventh day, the state of her chest seemed good, her cough was trifling, and the report adds, that she had often asked for dismissal, saying she felt herself well, and strong enough to return home. But she was detained for further observation. After three months, she was dismissed perfectly cured.

2. Anna Woladkowtschina, a widow, aged forty, was reduced to great weakness by repeated attacks of hæmoptoe, had a cough, yellowish green purulent expectoration, mixed with mucus, hectic and colliquative sweats, and was hastening quickly to her end. In two days the cough and expectoration were diminished; and in a month she had no symptoms of disease. She made the same remark as all the others, that she felt much easier in the tar room than elsewhere; and that changes of the weather affected her chest. During two days of dry frosty weather she felt an oppression at her chest, with violent palpitation, the common precursors with her of hæmoptoe, but they subsided without this consequence. After omitting the fumigation, however, the precursory symptoms, hæmoptoe and purulent expectoration, returned, but were banished by the fumigation: and again, on intermitting the remedy, which some repairs in the house prevented from being continued a proper length of time, they returned, and again were put to flight; so that at the period of the report she had only a little cough and mucous expectoration of good quality.

3. Anna Gourtschinskaia, a widow, also aged forty, had purulent expectoration, rigors, hectic, sweats, and œdema of the legs. Her case was hopeless, and she died very dropsical; but the fumigation, during the first five days, decidedly relieved the oppression, cough and expectoration, and prevented the pain of the chest from ever returning. As nothing could be imagined of use, the remedy was given up in five days more.

4. Maria Romanova, a widow, twenty-nine years of age,



after repeated symptoms of inflammation of the chest for four months, became the subject of purulent expectoration, cough, night-sweats, and all the attendants of phthisis. On the day after she was placed in the fumigation ward, she felt considerably eased; on the sixth day she was no longer hoarse, had no pain in the chest, and much less night-sweats. Her symptoms were much affected by the weather; but at the end of a month from the first employment of the tar she was convalescent. In another month the pain in her chest recurred, and she again recovered; but on being compelled to leave the tar-ward, for the accidental reasons above stated, she had a third relapse, and sunk.

5. Martha Ivanova, a widow, aged forty, had a chronic cough, which eventually became very violent, and was attended by purulent expectoration.

"In this situation she was sent to the fumigated ward, and immediately began to find relief. She slept the first night far better than she had done for a long time past. The following night she also slept well; the pains in her chest totally left her."

The medicines she was taking before her admission into this ward were continued; and we may here remark, that most of the patients took some medicines, which were but trifling; and however they might sometimes palliate symptoms, as an occasional blister, could clearly have no share in the cure. In a short time her cough became less frequent, and her expectoration easy, and her fever and sweats entirely ceased. But she at length grew worse and died.

6. Catherine Cornadi, twenty-seven years of age, had been ill six months, after getting wet through, with amenorrhœa, pain in the side, fever, cough, and finally with expectoration and sweats. The day after she was placed in the fumigation ward, "she said she already felt better, and had passed a better night than she had done since the commencement of her illness, and particularly that she felt much refreshed; the cough was less violent, and the expectoration less abundant. In a few hours after entering this ward, she perceived a general perspiration over her whole body. In three days more, there was a greater diminution of the cough, expectoration, and also of the perspiration. She slept extremely well, she had vomited (she before vomited every thing she took) only once, and this seems to have proceeded from some improper food, which she



had procured in a secret manner. She felt herself so well, that she begged for her dismissal. Afterwards, she became less disposed to spitting of blood. The expectoration, which at first had every character of pus, became gradually better in quality, and less abundant. The sweats, cough, and vomiting, also ceased by degrees, and her catamenia returned. Feeling herself well, she incessantly urged us to dismiss her; she was sent out of the hospital the 6th of March, (ten days from the first employment of the tar) perfectly cured. We have seen her since that time, working as before her illness, and continuing in perfect health."

His excellency Dr. Crichton had also directed Dr. Wochler, one of the physicians of the Aboukoff, or city hospital, to make trial of the remedy. One small room only could be procured, and into it no more than three beds could be crammed, so that the air was quickly corrupted. But one most decidedly consumptive patient was completely cured; the other, on whom the experiment was made, continued in so fluctuating a state, that Dr. Wochler had not, at the period of publication, thought right to draw up a report of his case. The former was that of Alexander Nimaëff, aged twenty-one, of a scrofulous habit, and hereditarily disposed to phthisis. From long and fatiguing journeys in cold climates, he had laboured under frequent attacks of hæmoptysis, and when admitted, was in the last stage of consumption; had violent fever, profuse and offensive sweats, vomiting, and diarrhœa; a cough, which compelled him to sit upright all night, and a copious expectoration of fœtid pus. He had been but a short time in the tar vapour when he said he was easier, and towards ten o'clock his cough grew less, and he fell asleep, nor did he awake till morning. He then said he felt better. In two months he was perfectly well, and shortly afterwards dismissed cured.

These are all the detailed cases in which the remedy has been employed. The pamphlet now closes with some remarks.

The tar fumigation gave great relief to every patient, and although it did not cure them all, this would have been almost more than could be expected, were it even a specific, when we recollect the disadvantages attending the exhibition, from the smallness of the ward, which prevented the air from being any thing but most corrupt, as the opening of a door or window

would have exposed the patients to considerable risk. In great disorganization a cure is out of the question, and could the ulcers be healed, there might not be sufficient of the organs left for the necessary functions. Dr. C. conceives that in large vomicae after peripneumony or hæmoptysis, the great mischief which has taken place, and the impossibility of the fumes penetrating through the large body of pus to the ulcerated surface, renders the change of success less than in tubercular cases. We are not quite clear that this is the true explanation of the fatality of the three unsuccessful cases—one was evidently beyond all means. The tar cannot be expected to remove or prevent tubercles, although it may heal them when suppurated; but this is almost every thing.

To ensure purity of atmosphere, Dr. C. recommends two fumigated rooms for consumptive patients; one for sleeping, the other for the day.

When the cough and hectic are much subdued, he dissuades us from persisting in the remedy, as it frequently induces a dry cough, and prevents the enjoyment of what is then fit for the patient—common air. In one instance of extraordinary success from the tar, its use was suspended occasionally from the irritation it produced, but during the suspension the disease always became aggravated.

The tar used for the cordage of ships is found infinitely the best; and the simplest and most effectual mode of fumigating a room, is to place the vessel containing the tar over a spirit lamp, taking care that it should boil slowly and not burn. The vessel should be well cleaned every day, and the fumigation repeated every three hours.

As we have all but too many opportunities of putting this plan to the test, we trust it will immediately have a full and impartial trial, that it may be speedily either established as good, or added to the list published by Dr. Roberts, in the Transactions of the College of Physicians, of remedies useless in phthisis, although neither given in small quantity nor hastily abandoned.

We have already begun to ascertain its merits. Nothing appears, *à priori*, more rational, than to employ applications to ulcers of the lungs, as well as to external sores; and tar, as a local remedy, has been long established.



## BIOGRAPHY.

*Biographical Notice of Dr. Alexander Monro of Edinburgh.*

[From the Edinburgh Courant, for January 1818.]

Among the many celebrated names which have adorned the University and Medical School of Edinburgh, few are more remarkable, or more justly entitled to respect, than that of the worthy and venerable character whose life we now presume to delineate.

As an able, active, and meritorious professor of anatomy and surgery, the late Dr. Monro was, for more than half a century, at the head of the great medical school of Edinburgh—and for the greater part of that time, as a practical physician, he was unquestionably at the head of his profession in Edinburgh and in Scotland, to many even distant parts of which he was often called, and from every part of which, as well as of England and Ireland, he was frequently consulted by letter in cases of peculiar difficulty and danger.

This distinguished professor was the son of another very eminent Dr. Alexander Monro, professor of anatomy in the University of Edinburgh, and father of the Edinburgh medical school; he was born in the year 1733, was from his earliest youth carefully instructed by his father in anatomy, and soon acquired such a taste for that science, and prosecuted the study of it with such ardour and perseverance, that in the year 1753, when he was just 20 years of age, he assisted his father in his anatomical lectures; the following year was appointed conjunct professor, and his father, in 1758, entirely resigned the office to his son, who, it must be acknowledged from the father's great popularity as a teacher, had an arduous task to perform, but which his talents, upon trial, were found well calculated to support. His clearness of demonstration, acuteness of distinction, accuracy of reasoning, and depth of knowledge, soon gained him the applause and confidence of his students, and not only fully evinced how completely he was master of his



subject, but also that he possessed, in no common degree, another talent no less necessary for a public teacher—the proper mode of communicating his knowledge to others.

His lectures were universally allowed to be conducted on a plan of the most extensive utility; and it may well be doubted whether so useful a preliminary and preparative for the study and practice of physic and surgery ever had been given before, in the form of lectures, or in any other form. Accordingly, they were attended by vast numbers of students from all parts of Europe, amounting, during the period he continued to teach anatomy, to upwards of 14,000.

Dr. Monro's acknowledged merit, as an anatomist and teacher of surgery, the quickness and clearness of his perceptions in those matters, his decisive judgment, and the intimate knowledge of every part of the practice of physic, which he uniformly displayed on these occasions, soon and most deservedly procured him general confidence, and very extensive practice as a physician.

Perhaps no man of the medical profession ever more strongly illustrated, by his conduct, and by the general tenor of his practice, the important truth, that the most valuable part of a physician's merit is good common sense, steadily employed on a particular subject. It is recorded of an ancient Greek physician, whose name (Trophilus) and whose apophthegm, but none of whose writings, have descended to us, that, when he was asked, "who would be a perfect physician?" he answered, "he who is able to distinguish what can be done and what cannot be done." This merit Dr. Monro possessed in a very high degree; his just notions of general science, his thorough knowledge of medical science, especially of morbid anatomy, but most chiefly his own good sense and constant habit of strict attention and accurate observation in his practice, enabled him to perceive at once the futility of many hypothetical doctrines, with respect to the nature and causes of diseases, and led him to distrust and reject many supposed remedies and modes of practice, which might be employed in consequence of these hypothetical dogmas.

The same accomplishments equally prompted him, and enabled him to appreciate the real merits of many remedies, which,

from time to time were introduced into practice with the most extravagant applause, purely on empirical principles. Thus, most effectually preserved from two of the worst and most frequent causes of bad practice, his had the merit of being simple, rational, and powerful, and consequently as successful as can be employed in the present state of medical science.

Of his merit as a practical physician, when acting singly, his brethren cannot fail to have a high and just notion, when they recollect what his conduct was in consultation; without any subtle disquisitions, without any controversies about obscure and disputed points, without credulity as to the virtues of particular remedies, and far above the miserable vanity of arrogating to himself any superior skill, or pretending to extraordinary success in his own practice, he was generally the first to propose, and always was ready, most candidly, to agree with others who proposed those simple and powerful modes of practice, from which alone, in urgent and dangerous cases, any essential benefit can be derived.

As an author, he has given to the world many important works, and many most useful and ingenious discoveries.

His love of science was sincere and ardent, his learning was extensive, and his judgment singularly correct. His profession was the study and delight of his life, and was prosecuted with unabated zeal, at a period when the enthusiasm of youth generally subsides. Yet, though his exertions in the improvement of knowledge were at all times carried on with the most unwearied assiduity, he never allowed them to interfere with the more immediate concerns of life. He was an affectionate husband, an indulgent parent, a kind friend; cheerful and ingenuous in his temper, animated in conversation, engaging in his manners, conciliating and benevolent in his disposition; ever anxious to promote the welfare of those around him, and ever ready to contribute to the happiness, or to alleviate the distress of his fellow creatures.

At length, after a period of 80 years, the greater part of which he had devoted to the service of mankind, commanding the love and veneration of those connected with him by the dearest ties—admired and respected by the world as a

man of talents and integrity—enjoying from early youth to extreme old age almost uniform and unexampled prosperity—it was his lot to combat the pain and affliction of a protracted disease, which terminated his long and well spent life, in the 85th year of his age. Yet during his confinement and gradual increase of feebleness, and with the discouraging prospect of still greater sufferings, his patience was ever most exemplary; nor did the distressing infirmities, inseparably attendant on excessive debility, ever produce a murmur of complaint, or even a hasty expression. He had fully tasted the enjoyments of life: he had run his long career with a conscience void of reproach, and prepared for death as an event which he neither desired nor feared—thankful for the blessings he had been permitted to enjoy—resigned to the sufferings he was destined to bear—and reposing with humble confidence on the mercy of Him by whom they were inflicted.



## ORIGINAL PAPER.

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*Observations on Mr. Charles Bell's Paper on the Muscularity of the Uterus, originally inserted in the London Medico-Chirurgical Transactions. for 1813. By WILLIAM P. DEWEES, M. D.*

In the 5th Vol. of the Eclectic Repertory, p. 37, is a paper on the muscularity of the uterus written by Mr. Charles Bell, on which we beg to make some remarks. If we merely regard the anatomical detail it contains, we have but little more censure to bestow, than might with propriety attach to any attempt that has hitherto been made to develop the muscular structure of this all important viscus; but not so with respect to the physiological and pathological inferences deduced from it. We cannot feel that Mr. Bell has been more successful in his description than Vesalius, Malpighi, Ruysch or Hunter have been—for it is confessed that these gentlemen bestowed much patient labour and industry in the investigation of this part, but without producing entire conviction on the mind of any one, that either of them was correct; for, each differs from the other in relating what he believed he saw, and what constituted the structure of the uterus. When then, men of such unquestionable talents as anatomists do not agree in their observations, we think we have a legitimate cause to doubt the *opinions* of any other on this subject, until his view shall be confirmed by repeated and carefully made dissections. "We can easily believe what we wish to be true," is an old truism, and strictly applicable to all, perhaps, who have attempted to demonstrate the muscular structure of the uterus: each appears to have had a preconceived theory to support, and his labour has been expended with a hope or perhaps a determination of finding the anatomy correspond with his opinion. They appear first, to have settled in their own minds what the mechanism of this organ should be in order to produce the phenomena of labour, and then set about dissecting

to confirm it; but in this they differed widely, because they had different notions of the agents required. Vesalius imagined that three strata were necessary to this end; he accordingly describes this number—one is said to be perpendicular, another transverse, a third oblique. Malpighi supposed the phenomena could be best explained, by the fibres of the uterus having a reticulated distribution; he, accordingly paints them of this form. Ruysch thought, that the fundus required the fibres to be so arranged as to form an orbicular muscle; he therefore says this part is so constructed; while the late Dr. Wm. Hunter was led to view the fibres placed in concentric circles around each fallopian tube, and in the body to have a transverse direction, &c. &c. Thus are we led to believe that a preconceived opinion has but too powerfully *biased* the anatomist, and led him to conjecture, rather than to discovery. For it will not be pretended that either of the men whose names we have just mentioned, lacked in industry or failed in opportunities; and to have cleared up the mystery that envelopes this subject, could this have been effected by these means, would have been a triumph that either would have been proud to have won. What have they achieved? certainly not the end proposed—for all cannot be right; and much do they differ in their statements, from each other. We think it fair to conclude from this discrepancy, that they were not acquainted with the true anatomy of the uterus, at least, as far as regards the distribution of its muscular fibres. We cannot help therefore recommending the prosecution of this subject to those whose opportunities may afford a chance of success, for we feel it a desideratum to be intimately acquainted with the minute structure of this wonderful viscus; and are well persuaded much remains yet to be done before a thorough acquaintance with it will be acquired, notwithstanding Mr. Bell seems satisfied with the knowledge he has of it. He has accordingly deduced consequences from what he supposes to be the arrangement of the fibres of the uterus, but to which we cannot tacitly subscribe. We again repeat that, in our opinion, much remains to be done; nor should any one be prevented from the prosecution of his enquiries on this subject by the opinion of Mr. Burns, (Gravid Uterus, p. 44.) “that the



course of the muscular fibres is of very little consequence to the accoucheur." We are of opinion that every anatomical fact is of importance either mediately or immediately; and to the accoucheur every thing relating to the uterus is, and always must be, of use; for if it be not useful to him, to whom will it be useful? he might as well have said in so many words, "that the anatomy of the uterus is of no importance to be understood by any one."

But in insisting on the utility of investigating the structure of this part, we are happy in being supported by the authority of Mr. Bell himself; for in p. 38, he says, "The prevailing notion that the muscular fibres of the uterus are very confused and scarcely perceptible, has prevented authors from founding rules of practice on the sure ground of anatomy. And if it be possible to place this matter in a clear light, it may banish, perhaps, a certain vagueness which is much to be regretted in so important a department of practice." In this we most cordially agree; and are happy in making use of Mr. Bell's opinions where they tend to support our own. But though we have employed these sentiments to strengthen what we wished to urge, we are not of opinion that he has succeeded better than his predecessors in placing his practical deductions in "a clear light," for we again insist much remains to be done before this subject can be well understood. We will however proceed with the more immediate object of this paper, and let Mr. Bell always speak for himself. "The most curious and obviously useful part of the muscular substance of the uterus," says Mr. B. "has been overlooked; I mean the outermost layers of fibres, which cover the upper segment of the gravid uterus. The fibres arise from the round ligaments; and, regularly diverging, spread over the fundus, until they unite and form the outermost stratum of the muscular substance of the uterus." But what makes this "the most curious and obviously the most useful part" of the uterus, we cannot comprehend—for certainly there is nothing more curious in the distribution of the fibres of this part than of any other part, and from Mr. Bell's description of them we should rather be led to consider them less "curious," because, agreeably to to him, they arise from the round ligaments and regularly di-



verge over the fundus. From this it would appear that these fibres are every way obvious, since both their origin and course are well defined. We would ask then, if both their origin and course be so well marked, how it has happened that they have been so long hidden from the eyes of other anatomists? For they cannot be the orbicular muscle of Ruysch; the perpendicular one of Vesalius; the reticulated one of Malpighi; nor the concentric ones of Dr. Hunter. But let it be admitted that Mr. B. is really correct on this point; is he so, in the offices he assigns them? "The round ligaments of the womb have been considered useful in directing the ascent of the uterus during gestation; so as to throw it before the floating viscera of the abdomen: but, in truth, the uterus could not ascend differently; and on looking to the connection of this cord with the fibres of the uterus, we may be led to consider it as performing rather the office of a tendon, then that of a ligament. It is familiarly known, that the subsiding of the belly in pregnancy, occasioned by part of the womb sinking within the brim of the pelvis, is the least equivocal sign of the approach of labour, and of the pelvis being of due dimensions: and in some measure this is also an assurance of the right presentation of the child. This layer of muscular substance operating on the round ligaments, is well calculated to assist in expelling the fœtus; but also in a particular manner it is provided for bringing down the womb in the first stage of labour, and is well calculated to give the uterus and head of the child the right position with regard to the axis of the pelvis." From this it would seem that the offices hitherto assigned the round ligaments are not the true ones—that they act the part of tendons; 1st. they serve to depress the uterus in the pelvis; 2d. they assist in the expulsion of the fœtus; 3d. their action in some measure serves as a criterion of a right presentation; 4th. they bring down the womb in the first stage of labour; 5th. they serve to give the right position to the uterus and head of the child, with respect to the pelvis, &c. Let us now enquire into the truth of the multiplied offices attributed to the round ligaments and the muscular fibres originating from them. With respect to the first we deny their exclusive agency for several reasons; 1st. we believe them insufficient for this purpose;

2d. we think their direction would not be favourable thereto; 3d. because we believe we can show that the whole mass of uterine fibres contribute to this end. We believe them insufficient because, agreeably to Mr. Bell's own statement, they are but partially distributed, and only "cover the upper segment of the uterus," and consequently can have but a limited power on it—to be effectual they must have the co-operation of the other portion of this viscus; we cannot therefore admit them to be more "obviously useful" than any other portion. Their direction would very often preclude the possibility of their being useful in the manner indicated; for instead of their being "well calculated to give the uterus and the head of the child the right position with regard to the axis of the pelvis," we should find that, in almost every instance except a first pregnancy, they would throw the fundus over the pubes and place the orifice at the projection of the sacrum or in its hollow. To perform the duties assigned them by Mr. B. they should possess very strong powers of contraction—but if these were exerted with due force, the round ligaments would be put upon a severe stretch; a situation highly dangerous to their structure. For, with the exception of Mr. B. they have been universally considered highly vascular—so much so in the estimation of some, that they have been considered almost entirely composed of vessels, and that the size of their vessels augment during pregnancy and become uniformly softer. Now, can we perceive any thing in this arrangement, corresponding with the duties and structure of tendons? Should the contraction of these fibres be as powerful as their alleged duties would exact, would there not be the greatest risk of a rupture of some of their vessels? certainly there would—and can we imagine nature so idly capricious as to increase this risk, by augmenting their vascularity? That they perform their share in the expulsion of the child is admitted, as we have little or no doubt but that every portion contributes to this end. And we farther believe, that the true cause of the subsiding of the abdominal tumor is, that some time previously to the manifestation of pains which certainly indicate labour, the uterus is in a state of pretty strong, but alternate contraction; and that this is excited in consequence, as it were, of the



uterus refusing to yield any longer, after having had its fibres put to an uneasy stretch, and thereby stimulated. The first effects of these contractions are felt by the blood-vessels of the uterus; they are compressed slightly and in consequence transmit less blood—the volume of the uterus is thus diminished, and will now in part enter the superior opening of the pelvis.

That this is the reason of the “falling” as it is termed, is rendered almost certain, by the phenomena now presented. If a finger be introduced into the os tincæ and gently pressed against the membranes, it will be found that they are alternately tense and relaxed, as is also the mouth of the uterus now in contact with the finger. If the hands be placed on the abdomen the same kind of sensation is perceived—that is, we find the uterine globe occasionally harder and softer. Now, were these appearances produced by the contractions of the fibres that originate from the round ligaments, and that spread themselves upon the “upper segment of the uterus,” we should find this body alternately approach and recede from the lower strait—but this is not the case; and to account for this set of fibres producing the phenomena just mentioned, we must suppose them to be in a state of permanent action, while all the other fibres are alternately contracting. The second use assigned these fibres by Mr. Bell, we generally agree to, not because they “originate from the round ligaments and spread themselves upon the upper segment of the uterus,” but because they are muscular fibres and constitute a portion of the uterus, every part of which, it is our creed, contributes towards the expulsion of its contents.

Moreover we cannot agree in the declaration of Mr. B. when he says that the sinking of the uterus within the pelvis “is the least equivocal sign of the approach of labour,” for assuredly there are signs, which direct the accoucheur with much more certainty, and were this the proper place several could easily be pointed out.

The third advantage derived from the action of this set of fibres and tendons is, that when exerted so as to depress the uterus “within the brim of the pelvis,” we have “in some measure an assurance of the right presentation of the child.” We scarcely know how this idea could be suggested for a mo-



ment, let alone gravely and deliberately advanced. To make the action of these fibres an evidence of a "right presentation," is to declare a connection between "the right presentation" and their action. What evidence has Mr. B. of this? We unhesitatingly say, none; for we assert without fear of contradiction, that the uterus falls "within the brim of the pelvis" with as much certainty when another part than the head presents, as when this latter portion of the child is to the os uteri. For there are but two reasons why this circumstance does not always obtain; first, where the uterine fibres are indisposed or incapacitated, to take on that action which in our view is essential to produce "falling;" secondly, where the uterus is too large either positively or relatively, to enter the pelvis; now, it is well known that neither of these causes have any necessary connection with the species of presentation.

The fourth office assigned by Mr. B. is that these fibres bring down the womb in the first stage of labour. Here we find a little difficulty to arrive at Mr. B.'s true meaning. If Mr. B. means by the first stage of labour what we presume he does, "the sinking of the womb within the brim of the pelvis," for he declares this "to be the least equivocal sign of labour," we shall merely refer to what we have said when that subject was under examination; but if he means the more advanced stage that most accoucheurs denominate the first stage,\* we should say that the use he assigns to these fibres would be injurious, as the lower part of the uterus would constantly be driven down before the presenting part, to the manifest delay of the labour.

The fifth use attributed to these fibres by Mr. B. is that they serve to give the right position to the head and uterus as regards the pelvis. Was the right position of the child and uterus to depend solely upon any influence these fibres could possibly exert, we very much fear that the act of child-bearing would not only be much more tedious, but also much more dangerous. For, if we are correct in our estimate of their powers, and mode of operating, we should find them, as has

\* Namely the opening of the mouth of the womb; secretion of mucus; pain, and gathering, as it is termed, of the waters.

already been observed, drawing the uterus out of the line it should take to give facility to labour. And were we to cede to them the power of regulating the direction of the uterus, we could not possibly grant them the power of doing this for the head; since it is well known to every practitioner of midwifery that while the membranes remain entire, the head may alter its position twenty times a day.

Mr B. says farther that, if it were not for the mechanism he describes, "we should be at a loss to conceive how the uterus, by its own action, could adjust the position of the orifice for the delivery of the child." We would ask is there any power that does this with exactitude? we should say we know no such power. Mr. B. has confessed himself no accoucheur; were he one he would have known that the uterus is subject to a displacement called "obliquity;" and that displacement obtains in a greater or less degree in almost every pregnancy. The body and fundus may incline to the right, or to the left, or anteriorly, while the orifice will be found in the opposite direction; so that the axis of the fundus and mouth rarely correspond with the axis of the pelvis, nor does this departure create any serious inconvenience, as it is easily remedied when necessary, and this without the aid of the round ligaments, or the fibres emanating from them. In a word we think Mr. B. has mistaken the offices of the round ligaments; and should the duties hitherto assigned them be not the true ones, we think those attributed to them by him, are quite as questionable.

In p. 39, Mr. B. observes that "after making sections of the substance of the womb, in different directions, I have no hesitation in saying, that towards the fundus the circular fibres prevail; that towards the orifice the longitudinal fibres are most apparent; and that on the whole, the most general course of the fibres is from the fundus towards the orifice. This prevalence of longitudinal fibres is undoubtedly a provision for diminishing the length of the uterus; or for drawing the fundus towards the orifice. At the same time these longitudinal fibres must dilate the orifice, and draw the lower part of the womb over the head of the child."

To this statement of the arrangement of the muscular fibres



of the uterus we can agree, but cannot consent *entirely* to Mr. Bell's explanation of their uses. We do not believe that the longitudinal fibres serve to "draw the lower part of the womb over the head of the child," because we see no such effect during the time of pain; on the contrary we invariably find that that portion of the uterus which surrounds the child's head, to be pushed with it lower into the pelvis during each pain, and the child retained nearly in the place to which it was driven by the alternate contractions, is owing to the tonic contraction of the uterus; and this last takes place in proportion as the uterus becomes emptied, for it is an inherent principle of this organ when in healthy condition, to lessen itself, as the distracting cause is removed; and to this latent power, the name of tonic contraction has been given, to distinguish it from the one which is accompanied with pain, and called spasmodic. It is true that we sometimes see a portion of the uterus suddenly retract itself when set at liberty, after having been detained and stretched by the presenting part, but this is owing to its have been unusually elongated and compressed between the head and pelvis; when then you relieve it from this state of durance, it will sometimes instantly escape, but not always; to the sometimes great inconvenience of the accoucheur. And we think we may here challenge a solitary instance in the practice of any man, of the mouth of the uterus being literally drawn over the head of the child. That it eventually passes over it we admit, because the head must pass through it before delivery can be effected. In strict parlance then, it is the head passes through the mouth of the uterus, and not the mouth being drawn over the head. Indeed, were this strictly to take place as Mr. B. says it does, it would be attended sometimes with great inconvenience; as this part would then be left at liberty to embrace the neck of the child, and thus offer great obstruction to the passage of the shoulders.

At p. 40, Mr. B. observes that a very principal effect of the muscular action of the womb is the constringing of the numerous vessels which supply the placenta, and which must be ruptured when the placenta is separated from the womb. To us it is really a matter of much surprise, situated as Mr. B. is with



every source of information at hand, that he should talk of the rupturing of vessels on the separation of the placenta from the uterus. We should have imagined that Mr. Bell, from his own observations, would have been able to correct the errors of the older writers on this subject; or had these failed, he surely might have been set right by almost any late author on the subject of midwifery. We convey no information at this day, when we say that there is no rupturing of blood-vessels by the separation of the placenta from the uterus; for it has been satisfactorily proved there is no inosculation of their respective vessels; that there is a greater or less discharge of blood after this process we admit, but this is from the mouths of vessels which remain patulous until closed by the tonic contraction of the uterus. We scarcely need ask what would be the consequences did this rupturing really take place. Inflammation, suppuration and gangrene would be the melancholy suite in most instances of otherwise healthy labours. But if this opinion raise our wonder, how much more powerfully should it be excited at the following limited and novel view of the uterus!

Mr. B. p. 40, says, "I have observed further, that although in producing contraction and thickening of a portion of the uterus, by boiling it, or by other artificial means, the fibres are made very evident, and the blood-vessels greatly constricted; yet they are not so effectually closed as in the natural contraction of the muscular fibres of the uterus. Thus," continues he, "we are led to contemplate the uterus as more peculiarly destined for the safe delivery of the secundines, than for the reception and growth of the ovum." Does the conclusion legitimately flow from the premises? certainly not—Because the natural contraction of the uterus will constrict its blood-vessels more effectually, than boiling will, it follows agreeably to Mr. B. that the uterus is "more peculiarly destined for the safe delivery of the secundines, than for the reception and growth of the ovum!" The fitness of the uterine fibres for distention; the gradual, beautiful, and regular order of their development; the protection afforded by them as a covering; the wonderful increase of capacity in the exact proportion to the necessity; the mysterious and hidden mode by which nourishment is prepared and conveyed; the production of the decidua;

the engrafting of the placenta; the almost perfect safety from external accident afforded by the waters of the amnion, all fail to make Mr. B. see that the uterus is as well calculated for the reception and growth of the ovum, as for the safe delivery of the secundines; and why? forsooth, because a piece of boiled uterus would not shut up its vessels as closely as if it were living!

"I have not succeeded," says Mr. B. p. 42. "in discovering circular fibres in the *os tincæ*, corresponding in place and office with the sphincter of other hollow viscera, and I am therefore inclined to believe that, in the relaxation and opening of the orifice of the uterus, the change does not result from a relaxation of muscular fibres surrounding the orifice. Indeed it is not reasonable to conceive that the contents of the uterus are to be retained during the nine months of gestation by the action of a sphincter muscle. The loosening of the orifice, and that softening and relaxation which precedes labour, is quite unlike the yielding of a muscular ring." This declaration of Mr. B. amounts but to this negative, that he did not find muscular fibres in the *os tincæ*--but does it follow they do not exist? Do not all the phenomena exhibited by this part during pregnancy and parturition satisfactorily prove they do exist? To what shall we attribute the resistance of this part in many cases of labour and abortions, but to the contraction of muscular fibres? To what shall we give the power, closing to a certain extent, the mouth of the uterus during each pain, but to muscular fibres? Or what is still more in point; what closes the mouth of the uterus upon the finger in the beginning of labour, in the absence of pain, when we gently irritate it? The answer we believe to be evident. Should the "loosening of the orifice, and that softening and relaxation which precede labour," be "quite unlike the yielding of a muscular ring," the contraction which almost invariably takes place with the accession of pain, certainly is not. It is completely familiar to every accoucheur, that during "a pain" the edge of the mouth of the womb becomes stiff and offers very considerable resistance for a long time. On what does this stiffening depend? we say upon the contraction of the muscular fibres which surround the *os uteri*.



Does it follow because Mr. B. thinks it "unreasonable to conceive that the contents of the uterus" can be "retained during the nine months of gestation by the action of a sphincter muscle," that that muscle does not exist? Is not the uterus, from the very important duties which it performs, entitled to its own particular powers and arrangements as well as another part of the human system? As well might Mr. B. declare the heart to be no muscle, because every other muscle has its interval of rest, because subject to fatigue, while the heart unweariedly continues its duties. Analogy may be safely and sometimes advantageously employed to strengthen an explanation, but the want of it should never be considered sufficient to destroy a fact. But would running a parallel between the powers of the os tincæ and other "muscular rings" weaken our reasons for supposing this part to possess them? Certainly it would not. Thus the sphincter of the anus and that of the bladder, are intended to contract and relax at short intervals; and when in a healthy state, do completely perform their duty; while the sphincter of the uterus, for we may so term it, is designed to maintain its contraction until that state shall be no longer necessary, and this in the healthy state is for the period of nine months. Should it relax sooner than this, more or less injury is done: but is this not precisely the case with the other sphincters? Does not mischief arise from the too frequent or the too rare relaxation of these parts?

We shall now notice another error of Mr. Bell's, into which he could not have fallen, had he had a knowledge of midwifery. In p. 42, Mr. B. says, the first movement of the uterus "is to shift its position to direct the orifice aright, and to sink down until the lower segment of the womb rests upon the brim of the pelvis: this is done by the operation of the muscular fibres on the round ligaments, and during this shifting of its position are experienced the true dolores præ-sagientes." Now any practitioner could have told Mr. B. that this movement frequently takes place two or three weeks sometimes before the slightest "pain" manifests itself; and this change is effected when every thing is well disposed, without pain, for the most part, being either an essential or a concomitant. And when this change does not happen, we are not to conclude that there is necessarily either a mal-presen-



tation or a deformed pelvis, but simply to consider that some interruption has been given to the general contraction of the uterus.

As this paper has extended much beyond the length we first contemplated it would, we shall pass without notice several observations of Mr. Bell's which pretty loudly call for animadversion, that we may spend a few minutes on his "improvement" in performing the *cæsarean* operation. In p. 48. Mr. B. gives the history of the dissection of a case in which this operation had been unsuccessfully performed by his brother Mr. John Bell. In p. 49, Mr. B. observes that "the circumstances of this case suggest very material improvements in the manner of performing the operation." He advises "instead of cutting into the womb, as was done in the preceding case," that a very small incision should be made, such only as would enable a finger to be introduced; by boring, aided by the disposition which the uterus has to dilate, another finger might be passed, and then a third, and at length the whole hand, in a conical form, might be forced into the womb. I further venture to suggest," continues Mr. B. "that this should be done as low down upon the lower part of the uterus, as the urinary bladder and the reflection of the peritoneum will permit; for at the lower part the uterus is least vascular, and most disposed to dilate. In the further prosecution of the operation, the child should not be suddenly extracted, but the feet being brought out by the opening, the body should be slowly delivered by the spontaneous action of the womb; and the whole operation performed as much as possible in imitation of the gradual progress of a natural labour: the only apology for hurry in the operation would be the separation of the placenta, or the compression of the cord in the narrow wound; but the placenta could not possibly be detached in the method now proposed, and it would be possible to guard against the compression of the cord."

We have chosen to give the words of Mr. B. at length, that no misunderstanding should arise from our relation of his "improvement." What is the "improvement" proposed? That a "small incision should be made" instead of the extensive one that has hitherto been used. Relying "on the disposition

which the uterus has to dilate\*" for the amplification necessary to deliver the child, &c. through it, Mr. B. directs the incision to be no larger than "would enable a finger to be introduced," but that this is to be gradually augmented "by boring" so as to admit the hand in "a conical form." How, and at what expense is this to be obtained? Certainly not by any "disposition the uterus has to dilate" at this time for it is now at its maximum of distention. Can it be supposed that under such circumstances, a hole capable of barely admitting a finger, can be increased so as to admit the whole hand, but at the certain hazard of tearing or rupturing the substance of the uterus? If this be true (and we think it cannot be doubted) what advantage has Mr. Bell's method over the old one? We say none—on the contrary we think it highly injudicious and dangerous. It has ever been a point yielded, that much more mischief results from distracting or lacerating a part, than from cutting it by a sharp instrument; a part treated as directed in this new method of operating, would then be precisely in the condition of a lacerated one, and of course would have to suffer all the "penalties" arising from this outrage.

In cases where (reasoning *à priori*) we should apprehend much less injury would be done to the substance of the uterus, we are cautioned with no common earnestness by the most experienced accoucheurs not to run the risk; we mean in certain cases of "floodings" where the mouth of the uterus is not sufficiently dilated to allow the hand to pass freely. We are directed with much propriety in such cases, not to employ too much force in dilating the os tincæ, lest inflammation with its consequences should ensue. And our own observation has furnished us with more instances than one, where the most melancholy effects have followed this ill directed manœuvre. If then, mischief may arise from the attempt to dilate with too much force a part from its structure capable of being dilated,

\* It is certainly new to us that the part indicated by Mr. B. for the incision (the lower part of the uterus) is more disposed to dilate than the upper part of this organ, and are at loss to discover on what he grounds this assertion. As far as the order of the development of the uterus from pregnancy will aid us, we think we have a right to declare that the lower portion of the uterus is less disposed to yield than the upper, as we uniformly find it in health to be the last that unfolds; and that this is an established provision of nature for the security of the ovum. Where this does not obtain, abortion is the uniform consequence.



how much more is to be apprehended from an attempt upon a part not fitted by its organization for this purpose? In the one instance we are merely stretching the fibres of a part in the direction they are known under proper circumstances spontaneously to yield; while in the other, we are obliging them, at the expense of their continuity, to give way to the distracting power of a wedge. That every evil consequent upon a severe laceration would follow this practice, we have every reason to fear; what then is gained by this "improvement?"

Hitherto we have been considering this practice under its most favourable aspect, that is, where the placenta offers no difficulty to it from its location. What then must be the objections where this mass is attached to the anterior part of the uterus? The difficulties we have just stated will not only obtain, but also those that must necessarily arise from forcibly detaching this body from its attachment with the womb. For when thus situated, it must either be detached, or penetrated; if detached, hæmorrhagy to a greater or less extent must ensue; if penetrated, (which by the by would be a work of much difficulty) much embarrassment would be experienced in extracting the child.

But let us admit that the hand has passed into the uterus and the feet seized, agreeably to the direction of Mr. B., how is the child to be extracted through the opening made for it? The child may be *forced* to pass as far as the axillæ; but how are the arms to be delivered? Will it be maintained that an aperture no more than sufficient for the hand to pass through in "a conical form," will be capacious enough, without further violence and mischief, to permit the exit of a child's body at the full period of gestation? How will the hand, or even two or three fingers be passed over the shoulders with a view to bring out the arms, since we must suppose that the artificial opening is now *completely* occupied by the body of the child? How are we to gain additional room to bring them from within the orifice of the wound? But let us suppose all these difficulties surmounted, how is the head to be relieved, or how obviate the compression on the umbilical cord? The "disposition which the uterus has to dilate," and on which Mr. B. seems almost exclusively to rely for the success of his operation, is not more



remarkable, *cæteris paribus*, than its tendency to contract when freed from any distracting force. If this be true, and we think it will not be questioned, no sooner would the shoulders be liberated, than the poor infant's neck would be instantly encircled by the artificial ring intended for its emancipation, and be, to all intents and purposes, entrapped in the pillory, which had been so dexterously made by the surgeon, of its mother's womb. In vain would we obey Mr. Bell's direction to "imitate as much as possible the gradual progress of a natural labour when attempting to extract the child, for the efforts of the uterus would lend us no aid, as they would be directed in a contrary course agreeably to the opinion of Mr. B. himself; for he has confessed the action of the uterus to be from fundus to mouth. Are we to expect a miracle wrought, because this improvement has been resorted to? Are we to expect, that the order of this organ's functions will be changed expressly to favour this new operation? In a word, how is the head to be relieved? We believe it cannot be delivered; unless indeed so much injury has been done to the uterus as to completely paralyse its natural powers. And in this case, we scarcely need say, it would be worse than Utopian, to expect any benefit to the mother from this operation. Where then is the advantage of this "improved" method of operating? We see none, nay, worse than none; for in the old method, both a mother and a child have been sometimes saved; but in this, we have no hesitation to declare it our belief, that mother and child would inevitably perish. The risk on the part of the child is most unquestionably increased, for it must suffer all the dangers that would arise from being delivered "footling" from a small pelvis or rigid soft parts, without even the equivocal benefit of the use of the forceps. It would seem that every step we take in this new operation offers but fresh difficulties; for let us suppose the child delivered; the placenta is yet to follow. If the uterus be in a state of atony when we separate this body—for separate it we must; for Mr. B. says "that the placenta could not possibly be detached" (spontaneously) "in his method"—the woman would sink from hæmorrhagy;—if it retain its powers of contraction, the artificial opening will be reduced to nearly the original size made by the knife. How in this case is the placenta to be delivered? Shall we be directed, again to dilate

this aperture with the hand and then seize with it the placenta? Will no difficulty be experienced in retracting the hand when loaded with the placenta?

How are we to obviate the most common, and most obvious risk, the compression of the funis, during this tedious and difficult operation? Mr. B. has told us "it would be possible to guard against the compression of the cord," but unfortunately has not detailed the method whereby this desideratum is to be obtained. He appears to have been aware of this difficulty, but has left no suggestion to obviate it; even the old method is not exempt from this disaster, as is proved by Mr. Bell's quotation of Mr. Hunter's case, but where he, Mr. B. roundly asserts, "in truth there is no disposition in the wound to contract," although Mr. H. was obliged to introduce a couple of fingers into the womb to protect the funis; for "the womb contracted round the neck of the child, so as to retard the delivery of the head and press the funis." (Note p. 49.) Here we find are two statements in the same paragraph in direct opposition to each other. Mr. Hunter, in relating his case, is supposed to state a fact; that "the womb contracted closely round the child's neck;" and he is quoted for the express purpose (as we suppose) to prove, that this does take place in this operation, and to bear Mr. B. himself out when he asserts that "the only apology for hurry in the operation would be the separation of the placenta, or the *compression of the cord in the narrow wound*;" yet he immediately after declares that, "there is no disposition in the wound to contract." How are we to reconcile this discrepancy in Mr. Bell, but by saying he had a theory to support?

But let us suppose the operation finished; what will be the condition of the poor, suffering, unresisting mother. Subjected by this method for perhaps hours\* to more than inquisitorial tortures, she becomes exhausted; scarcely daring to hope a life so jeopardized by severity can be saved; or perhaps is prevented even from wishing it, by the death of her infant, whose smiles were to be the humble and only reward for all her sufferings.

*Philadelphia, February 5th, 1818.*

\* For agreeably to the instructions of Mr. B. the body should be slowly delivered by the spontaneous action of the womb; and the whole operation performed as much as possible in imitation of the *gradual progress of a natural labour*."



## MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

## VACCINATION.

We offer no apology in giving circulation to the following observations of Dr. Muter, of Battle, Sussex, on the Cow Pox Inoculation, which have appeared in some of the principal publications.—The subject is of great importance; and we trust the Doctor's remarks will dissipate whatever prejudices may have been ignorantly created.

“THAT a person having had the cow pox properly, is as permanently safe from small pox as though he had undergone that disease in the natural way, however severely, cannot admit of a doubt. It is established beyond all controversy; but I confess, it is too true, that small pox often occurs to such as have been vaccinated. To render vaccination, in every instance, absolutely and permanently successful, it is necessary, 1st. That the matter used be good, that is, taken at a proper period from a pustule which has gone through the regular stages. 2d. That the specific action be excited and completed, locally, and constitutionally, without interruption; then not a case in ten thousand will fail. But to be certain of all this requires great care, and not less skill. Every medical man, and no other, ought to vaccinate—should frequently send for matter to one or other of the different institutions established on purpose to promote the interest of vaccination—for this plain reason, because he cannot depend upon what he borrows from another. He should likewise make himself master of the subject, and be able to say decidedly, this is a good or a bad pustule: here the patient is safe from small pox, or still liable to it. This can only be done at the end of two weeks, because that time is necessary to complete the formation, and absorption into the system of cow pox matter. But during this period the patient should be seen at least twice, in order to witness its proper stages. The causes of failure are concerns of the greatest importance, and should be placed in the most luminous point of view possible. Not only is the character of a medical man, but the life of the patient, at



stake; if he fails, the patient suffers from a loathsome and fatal disease, while the mistake ultimately recoils on himself. In many instances the way of a medical man with his patients is as the way of a ship on the sea, as the way of a serpent on a rock, trackless as the eagle's flight in the air, evanescent as the lightning's flash in the sky.—The patient dies, and dead men tell no tales.—Then who can judge where there is no evidence left upon which to determine; or, who can say, has the medical man done or not done his duty? In this instance, however, all are competent to decide. Has the small pox occurred to a single patient he formerly vaccinated? if so, he has not done his duty, provided that he had an opportunity to see the case repeatedly afterwards. My medical brethren, think on the responsibility to which you and I are subject; and remember, that vaccination proves one of the most delicate tests of medical acumen and assiduity.

“ I shall now point out a few of the more evident causes of the occasional failure of cow pox. 1st. There is often much difficulty in deciding positively, whether the patient has been perfectly and successfully vaccinated.—2d. Medical men are not sufficiently paid for vaccination, and it is attended with great loss of time always to see the patient sufficiently often.—3d. They borrow cow pox matter from one another. This is always a cause of uncertainty, and often productive of infinite mischief.—4th. Parents are often careless, and neglect to have their children's cases properly inspected.—5th. The specific action is frequently disturbed by accident, the child rubbing off the head of the pustule before it is fully matured.—6th, Cow pox matter is sometimes taken from an arm a considerable time after the appearance of the areola.—7th. There is also a risk in taking it too soon.

“ Mr. Hudson has with great propriety suggested a second vaccination in all doubtful cases. He has likewise pointed out unanswerable objections to a second inoculation with small pox.—So far we agree; but I must declare, that I consider all fear groundless as to the deterioration of cow pox matter from frequent repetition. To conclude; I have vaccinated a great number every successive year, and, to the best of my knowledge, no patient vaccinated by me has hitherto caught the small pox. Indeed, this is no more than what may be accom-

plished by every medical man, and every one who reflects on the accumulated evidence collected from every quarter of the globe, must admit that it is an indelible stain on the medical character to hear us publishing our own shame in reporting so many failures."—*Leeds Mercury*, February 7, 1818.

It appears by these very interesting observations, that the vaccine crustor scab, so generally used in the United States, is not commonly employed in Great Britain.—*Editors.*

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### Orfila and Majendie's Experiments on Morphi-um.

[From the London Medical Repository, for April 1818.]

THE fact that the *narcotic principle of opium* is morphi-um, an alkaline substance, *sui generis*, discovered by M. Serturner, is now pretty generally admitted; and although physicians in this country have not endeavoured to establish by experiments the effects of this substance on the animal economy, yet, many trials of it, both in its simple state, and in combination with various acids, have been made by various physiologists on the continent. The most celebrated of these experimenters are M. Orfila and M. Majendie, both of whom have published details to their experiments\*, and it is now our object to lay an abstract of these memoirs before our readers.

In the first *M. Orfila* purposes,—“1st, to establish that the aqueous extract of opium owes its medicinal properties to an alkali composed of oxygen, hydrogen, carbon, and azote; 2dly, to compare the effects of the aqueous extract of opium on the animal system, with those of morphi-um in its simple state, and in its state of combination with acids, with oils, and with alcohol; and, 3dly, to point out the method of treating symptoms indicative of poisoning by morphi-um.”

Before entering upon the physiological part of his Essay, M. Orfila describes the physical and chemical properties of morphi-um, which we need not transcribe, and then details the method by which Robiquet orders it to be prepared, as the best process for procuring it. “Boil, for a quarter of an hour, a concentrated infusion of opium with a small quantity of mag-

\* Vide Nouveau Journ. de Médecine, et Chirurgie.—tom. i. p. 1.



nesia; a greyish precipitate will be produced, which appears to be a compound of morphia and a sub-meconate, with some colouring matter: wash it on a filter, and boil it with concentrated alcohol, which dissolves the morphia, and allows it to precipitate almost entirely as it cools. It is necessary to redissolve the morphia in concentrated alcohol, in order to obtain it in a state of purity."

The first set of M. Orfila's experiments were intended to ascertain "the action of Morphia itself on the animal economy." In two experiments, that substance was introduced into the stomach of two dogs in the doses of two and five grains; and in a third experiment it was applied to the exposed cellular tissue on the thigh of a dog: vomiting, partial paralysis, and other symptoms of poisoning by opium were produced; but the animals rapidly recovered. From these experiments, M. Orfila, finding that morphia alone, owing to its little solubility in water, exercises but a feeble action on the animal economy, next tried it in combination with some acids.

The acid with which M. Orfila first combined it, was the acetic, diluted with water. Six grains of the acetate thus formed were introduced in the stomach of two dogs. In a short time the posterior extremities were paralysed; the animals seemed to be asleep, but were roused by the smallest noise; and, as if terrified, made fruitless efforts to escape; but as they fell in the attempt, they appeared instantly again asleep. The pupils were dilated, the pulse was slow, and the respiration labouring. At the end of eight hours they uttered a piercing cry; but on the following day all the symptoms diminished, and the animals gradually recovered their functions.

"Another dog was treated in the same manner, with six grains of the aqueous extract of opium dissolved in half an ounce of weak acetic acid. The posterior extremities became so enfeebled that the animal walked with difficulty; there was a slight tendency to sleep, but the respiration remained unaffected, and next day the animal appeared in perfect health.

Six grains of morphia dissolved in vinegar being injected into the cellular tissue in the thigh of a small dog, nearly the same symptoms were produced as when the acetate was introduced into the stomach; but the feebleness of the hind legs



did not altogether subside until the second day afterwards; and when twelve grains of the acetate were employed, the animal did not recover its ordinary state of health until the close of the fifth day. When six grains of the aqueous extract of opium dissolved in the acetic acid was injected into the thigh, in the same manner as the acetate of morphia, the symptoms subsided the next day; and on the third day, when the dose amounted to twelve grains.

Two grains of morphia, dissolved in water slightly acidulated with vinegar, were injected into the jugular vein of a stout dog. "The only symptom produced was paralysis of the posterior extremities; which terminated on the evening of the same day. On substituting two grains of the aqueous extract of opium for the morphia, no effect whatever was produced.

"One grain of morphia was dissolved in double the quantity of acidulated water, as in the former experiment; the effects produced were, at first, paralysis of the posterior extremities, and then drowsiness. These symptoms were augmented in a quarter of an hour; but they subsided in five hours, and on the following day the health of the animal was completely re-established. A dog of nearly the same size and strength was instantly killed, by the injection of two grains of morphia dissolved in acidulated water. Two grains of recently prepared aqueous extract, dissolved in the same quantity of acidulated water, and injected into the jugular vein of a robust dog, produced paralysis of the posterior extremities, drowsiness, and impeded respiration. These symptoms, however, subsided in an hour, and the animal walked with ease."

From these experiments M. Orfila has drawn the following conclusions: "1°, that morphia dissolved in acetic acid produces the same symptoms as the aqueous extract of opium; which inclines him to believe that the active ingredient of the extract is a salt analogous to the acetate: 2°, that the acetate of morphia exerts a more intense action on the animal economy than the same dose of the aqueous extract of opium. But it is necessary to reflect, that if twelve grains of the aqueous extract of opium does not occasion so violent an effect as twelve grains of morphia dissolved in vinegar, it is owing to that quantity of the extract containing, besides the morphia,

two acids, some extractive, &c., which necessarily reduce the proportion of morphia to considerably less than twelve grains. It is, therefore, extremely probable that if twelve grains of this alkali were dissolved in the peculiar acids contained in the aqueous extract of opium, more intense effects would be obtained than result from twelve grains of morphia dissolved in acetic acid. This would also necessarily occur, if the acid which is combined with the morphia in the aqueous extract of opium did not neutralize it as well as the acetic acid; for it is evident that, in this case, the morphia being more free, would exert a greater intensity of action.

"With a view of trying the effect of another acid, twelve grains of morphia dissolved in water, slightly acidulated with sulphuric acid, were applied to the cellular substance on the thigh of a dog. In six minutes the posterior extremities were paralyzed and the pupils dilated; a profound sleep appeared to follow, from which, however, the animal was roused by the least noise. These symptoms declined in six hours, and on the following day the animal walked without any difficulty. On substituting *hydrochloric acid* for the sulphuric, some vertigo and feebleness of the hind legs supervened at the end of two hours, and in another hour the prostration of strength was complete, and succeeded by the same symptoms as in the preceding experiment. On the following day the animal appeared in perfect health.

"These experiments prove that the sulphuric and hydrochloric acids more completely neutralize the poisonous properties of morphia than the acetic acid, since the effect produced by an equal dose of the acetate is more intense than that which follows the employment of the sulphate and the hydrochlorate. They also demonstrate the error of *M. Ridolphi*, in asserting that acids are the best antidotes of morphia; and that animals might swallow, with impunity, combinations of morphia and the acetic, nitric, and hydrochloric acids\*."

The next set of experiments made by *M. Orfila*, had for their object to determine the effect of *morphia dissolved in oil of olives*. Very violent effects were produced when six grains only were swallowed; and by augmenting the dose to

\* Vide Brugnatelli's Journal, December 1817.



twelve grains, death followed in eighteen hours after the mixture was swallowed. The same result also followed the injecting of a solution of twelve grains of morphia in an ounce of olive oil into the cellular substance on the thigh of a dog; and likewise by the injection of a grain of it dissolved in a drachm of oil. These results appear to prove that oil neutralizes the poisonous property of morphia in a much less degree than acetic acid, or even than the sulphuric and hydrochloric acids.

“The quantity of morphia which *concentrated alcohol* can dissolve is so small, at the ordinary temperature of the atmosphere, that when diluted with a moderate quantity of water, the mixture must contain, comparatively speaking, scarcely any morphia. In experimenting, therefore, with this solution, it is by no means certain whether the effects should be attributed to the alcohol or to the morphia; but there is no doubt that the quantity of alcohol necessary to dissolve three grains of morphia is sufficient of itself to kill any dog to whom it might be administered. The case is different with man, who is accustomed to the use of spirituous liquors: and, from the experiments of M. Sertuerner himself, who took, in three quarters of an hour, a grain and a half of morphia dissolved in a drachm of alcohol diluted with several ounces of distilled water, it acts powerfully in this combination.

“On depriving the aqueous extract of opium of its morphia, eighteen grains of it, introduced into the stomach, and applied to the cellular tissue on the thigh of a dog, produced scarcely any sensible effect.”

From the whole series of experiments, of which we have attempted to give an abstract, M. Orfila concludes—

“1, That morphia may be introduced into the stomach of even weak dogs, to the extent of twelve grains for a dose, without producing any very sensible effect; whilst the same quantity of the aqueous extract of opium produces violent symptoms of poisoning and sometimes even death. This inertness of morphia depends on its little solubility, and the consequent difficulty with which it is attacked by the gastric juices.

“2, That the salts of morphia which are soluble in water, such as the acetate, the sulphate, and the hydrochlorate, act



very much in the same manner as the aqueous extract of opium; which induces the belief that the effects of that medicine ought to be attributed to the salt of morphia, and that this is probably the meconate discovered by M. Sertuerner, and the existence of which has been confirmed by M. Robiquet. This important fact ought to lead us to search for morphia in indigenous plants, and to separate it for the purpose of transforming it into salt, and for substituting that for the watery extract.

"3, Morphia dissolved in the acetic acid exerts upon the animal economy a more intense action than the same dose of the aqueous extract of opium; a phenomenon which proves that the extract contains other principles besides morphia.

"4, The aqueous extract of opium, from which the morphia has been separated, may be administered in a large dose without producing symptoms of poisoning. And if it sometimes exhibits a slight action, it is owing to the separation of morphia being incomplete.

"5, Six grains of morphia dissolved in oil of olives, appear to act with more intensity than twelve grains of the aqueous extract of opium, which proves that oil neutralizes much less the poisonous properties of morphia than the acids. This fact is remarkable, and affords the means of doubling, in some degree, the medicinal properties of the aqueous extract of opium; a result which is quite novel.

"6, Morphia, like all other substances which produce their effect after being absorbed, exerts a more intense action when it has been injected into the veins, than when simply applied to the cellular tissue, or introduced into the stomach.

"7, The poisoning produced by morphia shows itself by the same symptoms as that occasioned by opium, and requires to be treated in the same manner. The poison must first be expelled by emetics, and afterwards vegetable acids considerably diluted, with coffee, &c. freely administered. These means, sometimes, aided by bleeding at the jugular vein or the arm, will restore the patient.

"8, Alcohol diluted to the degree which is necessary to prevent it from acting as a poison to dogs, dissolves so small a quantity of morphia, that it is impossible to ascertain the ef-

fects of such combination upon these animals. But it is nevertheless probable that the alcoholic solution of morphia, may be successfully employed by man, who being in the habit of taking spiritous liquors, can take a large dose of diluted alcohol without any inconvenience."

"The paper of M. Majendie, on the subject of morphia, is in some degree more interesting than that of M. Orfila, in as much as it exhibits the effects of this important agent on the human economy in the state of disease. After some preliminary observations, our author details the following case.

"A lady, twenty-four years of age, had been afflicted for ten years with a complaint which I consider to be an aneurism of the thoracic aorta. She had been treated at different times by well informed physicians, by quacks, by pharmacopolists, by magnetizers, herborists, &c.; and she had, strictly speaking, tried all the resources of art and of empiricism. She was, nevertheless, tormented with constant wakefulness, and extremely acute pains in the region of the diaphragm, as well as in the lower extremities, which were very much wasted.

"I at first employed prussic acid with some advantage, but its use could not be continued more than six weeks, as it occasioned delirium, pains, and anxiety. I then decided on trying the salts of morphia, the narcotic powers of which I had ascertained from experiments on the lower animals: and having procured some which had been prepared by M. Planche, I prescribed four pills, containing each a quarter of a grain of acetate of morphia; and requested the patient to take one every night and morning.

"The first night, she took a pill on going to bed; but finding no sensible effect from it at the end of half an hour, she took a second. Some minutes after she had swallowed it she fell into a profound sleep, which she had not experienced for many months. She slept quietly for three or four hours, but awoke towards the middle of the night, and complained of severe nausea. She however, soon slept again. This occurred several times successively; and at the end of six hours, violent efforts of vomiting coming on, she rejected a small quantity of mucus and bile. She did not again sleep, but remained in a



quiescent state which she had not before experienced; and during the whole of the night she had been altogether free from pain.

"In the morning, when I saw her, both herself and her parents expressed the greatest satisfaction for the quiet night she had passed; and were willing to repeat the medicine. It was, however, evident that the medicine had been overdosed; and therefore, resolving to moderate the dose, I consequently ordered four pills, each containing an eighth of a grain of acetate of morphia, and directed the whole to be taken in twenty-four hours. In this manner I obtained the sedative effects of the medicine without its deleterious results.

"The patient took these pills for six months, and always with advantage. She regulated the number by the effects produced; and, what may appear remarkable, the continuance of them did not weaken their effects: nor can she even now take more than four in the twenty four hours, without experiencing some inconvenience, such as violent cephalalgia and nausea.

"I tried, with the same patient, to employ the muriate of morphia instead of the acetate; but the experiment did not succeed; for it was necessary to take a grain and a half of that salt to produce its narcotic effect, which was, even then, imperfect: and the patient being sensible of this difference, was not desirous of continuing its use.

"The sulphate of morphia, which I have also tried on the same person, has a more feeble action than the acetate, but much greater than that of the muriate: its narcotic power is also more complete, the sleep which it procures being more free from delirium: in a word, its mode of acting approaches more to that of the acetate, although it is sensibly less energetic.

"The patient continued to use it for four months in conjunction with the acetate. She named the acetate "*her stronger pills*," and the sulphate "*her weaker pills*;" although each contained the same quantity of the salt, viz. the eighth part of a grain. According to the degree of her sufferings, or the quantity of sleep which she enjoyed, she took the stronger or the weaker pills, and sometimes combined the action of both kinds.



"About three weeks ago the patient, as is often the case with those who are long afflicted, expressed a desire to change the remedy, and requested me to give her some other pills. I proposed to her the gummy extract of opium, the effects of which I had compared with the salts of morphia: but she objected to the formula, assuring me that she had frequently taken it; and that the preparations of opium were always hurtful to her. Supposing that her imagination had deceived her in this respect, I proposed the essential salt of Derosne, without informing her what it was: she consented to take it; but I was soon convinced that what she had stated regarding the effect of opium was correct; for half a grain of the essential salt, which she took in four pills in the course of twenty-four hours, excited extreme agitation and the most intense cephalalgia. The patient, therefore, returned to the use of the salt of morphia, and has continued it to this day.

"I have employed the above-mentioned salts of morphia with the most decided benefit. I may mention, among other cases, that I gave the acetate to a lady who had a scirrhus of the left mamma, and refused to submit to the operation. For two months she took a quarter of a grain of the acetate of morphia every day, without any other remedy: the lancinating pains which had tormented her were greatly subdued, and the intervals between them much lengthened.

"From these facts, I am of opinion that the acetate and the sulphate of morphia may be advantageously employed as narcotic medicines."

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Mr SAMUEL YOUNG has in the press, further Reports of cases of Cancer successfully treated by his new method of Pressure.

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JOHN SYNG DORSEY, M. D. is appointed Professor of Anatomy in the University of Pennsylvania, in the place of Caspar Wistar, M. D. deceased.

## METEOROLOGICAL OBSERVATIONS.

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State of the weather at Philadelphia, during the first six months  
of 1818.

### *January.*

Thermometer—Lowest at 8, A. M. 11—31st day of the month,  
Highest at 3, P. M. 48—7th.  
Mean - - 32

Winds—variable, mostly westerly and southerly—little snow,  
the weather mild.

### *February.*

Thermometer—Lowest at 8, A. M. 9—10th day of the month,  
Highest at 3, P. M. 54—28th.  
Mean - - 30.

Winds—chiefly westerly—The Delaware frozen over on the 8th,  
and continued fast until the 28th of the month; but little snow.

### *March.*

Thermometer—Lowest at 8, A. M. 25—6th day of the month,  
Highest at 3, P. M. 68—14th.  
Mean - - 42.

Winds—westerly, and north and south—mild weather general  
ly; little rain here; snow on the 28th; but very considerable inundations  
in the States to the northward and eastward; also in the north  
western parts of Pennsylvania. On the 18th, ice islands were seen  
off the banks of Newfoundland, and very tempestuous weather ex-  
perienced on the French and English coasts.

### *April.*

Thermometer—Lowest at 8, A. M. 40—20th day of the month,  
Highest at 3, P. M. 64—16th.  
Mean - - 50.

Winds—much northerly; cool weather; little rain. Account in the  
News-papers of an ice island being stranded on the most western of  
the Shetland islands, in the latter part of this month.

*May.*

Thermometer—Lowest at 8, A. M. 43— 4th day of the month,  
 Highest at 3, P. M. 84—27th.  
 Mean - - - 60.

Winds—chiefly westerly; rain and cool weather until the 21st; from that time. fine growing weather. Unusually severe hail storms in Virginia.

*June.*

Thermometer—Lowest at 8, A. M. 64—19th day of the month,  
 Highest at 3, P. M. 92—28 and 30th.  
 Mean - - - 75.

Winds—mostly westerly; copious rains. From the 1st to the 7th, many large ice islands seen between lat. 45. E. long. 46. and lat. 49. E. long. 50. The prospect of grain of all kinds is flattering, plenty of vegetables, and a moderate quantity of fruit. The weather unusually warm the last week of the month; an hail storm on the 18th. In the latter end of last year and beginning of this, many cases of Typhus gravior occurred, especially in the Alms House and Prison, which have disappeared, since the coming on of the warm weather; several severe cases of Rheumatism last month; Scarlatina, of a mild form, exists; some Small Pox continues, but does not appear to spread much, or to prove mortal often. A state of general health has been experienced, for the last six weeks; our common situation at this season when no epidemic prevails.

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 OBITUARY.

*Died*—in Philadelphia, on the 28th day of April, 1818, Doctor SAMUEL CLEMENT HOPKINS, aged thirty-one years.

— on the 1st day of May, 1818, Doctor BENEDICT D. POTTS, in the twenty-eighth year of his age.

— on the 31st day of May, 1818, Doctor ELIAS BOUDINOT STOCKTON, in the twenty-ninth year of his age.



THE  
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AND  
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SELECTED PAPERS.

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*Uncommon case of Aneurism, by R. D. MUSSEY, M. D. Professor of the Theory and Practice of Physic at Dartmouth College.*

[From the New-England Journal of Medicine and Surgery, for April, 1818.]

IN the month of June 1814, Jethro Freeman, a black man, called at my study in Salem, Massachusetts, and requested advice for a swelling in his neck, and an almost incessant dry cough. My friend and partner in business, Dr. Daniel Oliver, being then present, assisted in the examination. We found a pulsating tumour on the right side of the neck, extending along the clavicle from its external extremity about an inch and three quarters, while at the middle or broadest part of the tumour, its lateral diameter was two and an half inches, and its height, from the clavicle upward, was about two inches. This swelling was somewhat painful, and when pressure was applied to it, the pain was increased, and the cough instantly aggravated. The pulse in his two wrists was alike.

In attempting to account for the origin of the tumour, he stated, that sometime in the preceding April, early one morning, a man broke into his house and fiercely seized him by the

throat, under the pretence of searching for stolen goods; that a scuffle ensued, in which he exerted considerable strength upon the intruder, and that, from that time there was soreness and a small swelling in his neck, which had been gradually increasing. That he had since been employed in removing large quantities of corn from the street, to a third story grain loft, and that he carried it upon his right shoulder, in bags containing three and four bushels, and some of them more. His *opinion* was, that the violent seizure of his neck, caused the swelling. Jethro was about thirty seven years old, rather short, of middling stature, with a large head, thick and short neck, very broad chest, and prominent muscles.

On his being informed that the swelling could not probably be removed, except by an operation, and that this was, at best, in his case, a doubtful remedy, he insisted on having *something for his cough*. This symptom, however, we apprehended would be as difficult to remove as the swelling, under the full impression, that it was in some way caused by the tumour. Two or three times after this, in the course of the summer, I saw Jethro in the street, and though the cough had a little abated, the tumour had increased, and his spirits were dejected from hearing sentence of death, so often pronounced upon him by the different physicians whom he had consulted.

Having removed from Massachusetts in the autumn of 1814, I knew nothing further of this case till January 1816; when being in Salem, I was one day suddenly struck with the appearance of Jethro crossing the street to meet me. He came up laughing, and accosted me by saying, "my neck that you said would kill me, has got well." I looked at his neck and could perceive no tumour, but was in too much haste to go into a full examination. Soon after, I called at the distillery in which he was employed, and received from him the following account.

That in the autumn of 1814, he applied to Dr. Sewall of Ipswich, whose prescriptions, the chief of which was blood letting, gave him some relief, but who, like others pronounced his case desperate, and told him, that to lengthen out life to the greatest possible extent, he ought to avoid exertion of every kind. To this advice, he adhered for a while; but at length



grew tired of doing nothing, and without the knowledge of his friends or physician, succeeded, by concealing his disorder, in entering his name in a privateer, and left Salem harbour on a cruise in November, 1814. That one evening, about three weeks after they had sailed, he was thrown into a violent fit of laughter, during which the tumour burst into his throat and caused him to throw up about "a quart of blood and corrupted matter," that he was *very faint that night*, but was comfortable, though too weak to sit up the next day. That a second discharge of "half a pint" occurred three days from the first, and that in a fortnight he was able to do the duty of a cook; and during the remainder of the cruise, (upwards of three months,) and since that time, his health had been so good, as to allow him to labour almost without interruption, although when he used sudden and strong muscular exertion, he felt a degree of pain in the chest, and difficulty in breathing.

I examined his neck attentively, found its appearance natural, but could not trace the slightest pulsation, either in the right side of the face or neck, or in any part of the right arm. He said there was no loss of strength in the right arm, but there was a greater sensibility to cold in it, and in the right side of the face and neck than formerly; and that, since his recovery, there had been nothing like sensible perspiration upon those parts. This last part of the statement was confirmed by a fellow labourer in the distillery, who assured me that he had often observed a profuse sweat upon the left side of Jethro's face, while the right side remained perfectly dry.

I considered this a case of spontaneous cure of aneurism, but since that time have had no particular intelligence from it, until very recently. To the politeness and friendship of Dr. Sewall of Ipswich, I am indebted for a communication which enables me to give its subsequent history. This communication evinces the same zeal and exertion for the promotion of the interests of the profession, which its author has displayed on former occasions, and which is worthy the imitation of all who have it in their power to register extraordinary cases, or trace, by the knife, the effects of disease. I give the Doctor's own account.

"From the time of his return from sea, in the spring of



1815, Jethro continued to labour at his accustomed employments till early in the spring of 1817; when he suffered from an attack of inflammation of the lungs, and was admitted into the almshouse of this town, (Ipswich) under the care of Dr. Choate, whose politeness in the facilities and aid he has afforded in this case, lays me under great obligations. Dr. Choate informs me, that from the time Freeman came under his care till his decease, he was affected with an almost incessant cough, copious expectoration, hoarseness and difficult respiration, with wheezing as though his breath passed through a narrow aperture. He manifested great impatience of an erect posture, and always studied that position of the body which gave the greatest capacity to the chest. He continued in this situation till sometime in April 1817, when he was taken with profuse hæmorrhage from the mouth, and died in about five minutes."

*Dissection.*

"In company with Drs. Choate and Story, I made an examination twenty hours after death, and found the following morbid appearances. On opening the thorax, the lungs were found adhering to the pleura costalis in nearly their whole extent of surface, were dense and considerably distended with blood contained in the vessels and air cells. The heart and aorta were almost entirely empty. The arteria innominata was formed into an aneurismal sac three inches in diameter, in the form of a globe considerably flattened. The mouth of this artery was about twice the natural diameter. At the place of its bifurcation into the right carotid and subclavian, it was impervious and appeared to have been the seat of former inflammation, having with its cellular substance been formed into an indurated tumour of the size of a pullet's egg. The aneurismal sac was partially distended with blood, adhered firmly to the anterior and right side of the trachea, while it so compressed and flattened it, as to lessen its caliber more than one half. We found two apertures passing between the annular cartilages into the sac: these appeared to have been recently formed, and were probably occasioned by a rupture of the sac, and bursting of its contents into the trachea. The largest of these was three fourths of an inch in length. The carotid

and subclavian arteries in emerging from the aneurismal tumour, had degenerated into firm cords for about an inch; after which they were pervious in their various distributions, but considerably contracted in size, with their coats proportionably thickened. Many of the lymphatic glands in the neighbourhood of the aneurism, were enlarged to the size of grapes, and of a livid colour. The abdominal viscera exhibited a natural appearance except the stomach, which contained about a quart of fluid black blood. The coats of this organ manifested no marks of disease."

*Remarks.*

"It appears probable, that at the time the subject of the above case was exposed to great muscular exertion, the arteria innominata and a portion of the right carotid and subclavian arteries became enlarged into an aneurismal sac. This sac was so compressed in its middle, by the right clavicle, as to assume, in the course of its enlargement, the form of an hour glass, one half rising above the clavicle, the other remaining below out of sight. In the winter of 1814, while the patient was at sea, that part of the sac above the clavicle, having formed an adhesion to the contiguous parts, was ruptured, and discharged its contents into the trachea, which gave the idea of a spontaneous cure. Previous to this event,\* an adhesion between the sides of that part of the sac compressed by the clavicle, must have taken place, to cut off the communication between the upper and lower sac, so as to prevent fatal hæmorrhage. This adhesion could not have taken place *long* before the rupture of the sac; for on examination but a few weeks before it was ruptured, the tumour exhibited a strong and distinct pulsation, and continued to increase in size. That part of the sac remaining below the clavicle probably continued to enlarge till it burst at the time of the patient's decease. From the size and situation of this tumour, and its pressure on the lungs and trachea, we can easily account for the cough, hoarseness, wheezing, difficult respiration, and impatience of an erect

\* Dr. Sewall informs me, that before Jethro went to sea, in 1814, the pulsation had ceased in his right arm, and the right side of his neck and face.



posture which so constantly attended the patient during the latter periods of the disease.

"As the circulation in the right arm, and right side of the head and neck, through the medium of the arteria innominata must have been entirely cut off, at least since the rupture of the upper sac, in December 1814, it would be gratifying to know by what vessels these parts were supplied with arterial blood. There could never be perceived either debility, emaciation, or derangement of function in these parts, except coldness and want of perspiration. Was not the circulation carried on chiefly through the circle of Willis, or rather that part of the circle formed by the basilar artery by which the two vertebral arteries freely communicate with each other? I have regretted that it could not have been determined by an injection of the whole subject, by what vessels the parts deprived of pulsation were supplied with blood, since it would probably have furnished an interesting specimen of the resources of the animal economy in such cases. May not this case be considered as supporting the doctrine of Bichat, that the heart is unaided by the contraction of the arteries, in the circulation of the blood?\*

"The blood found in the stomach, was probably swallowed during the continuance of the hæmorrhage. Perhaps some part of it passed the œsophagus after the patient became insensible."

In addition to the above remarks of Dr. Sewall, I will offer only a suggestion by way of query, whether the aneurismal sac, the rupture of which destroyed the patient, might not have been formed after the spontaneous cure of the upper sac; or if it existed *before*, whether it must not probably have been very small compared with the other, at the time of its rupture in December 1814.

R. D. MUSSEY.

January 3, 1818.

\* See an interesting memoir on the agents in the circulation of the blood. *New England Journal*, Vol. II. p. 9.



*Observations on the Internal Use of Nitrate of Silver.*

By WILLIAM BALFOUR, M. D.

[From the Medico-Chirurgical Journal and Review, for June, 1818.]

CASE 1. On the 14th of August, 1816, Mr. A. applied to me, oppressed with a variety of very distressing complaints. The leading features of these were, general debility; debility of the inferior extremities, approaching to paralysis; complete relaxation of the sphincter ani; prolapsus of the gut, accompanied with frequent loss of blood; and a perpetual and copious gleety discharge. He dated the commencement of his complaints fourteen years back: had put himself under the care of some of the most eminent practitioners in this city, from whom he derived no benefit. He afterwards went to London, for the purpose of consulting the late Dr. Beddoes, who guessed the cause of his complaints the moment he saw him walk. Dr. Beddoes asked him if ever he had received an injury in the back? The patient declared positively he never had. But upon the doctor's insisting on it, came at last to the recollection of having been struck forcibly on the lumbar vertebræ by the shaft of a gig, a short time before he began to complain. From Drs. Beddoes and King, the last of whom was likewise consulted, he derived no further benefit than what resulted from the application of ligatures to some vessels of the rectum, by which hæmorrhage was checked to a very considerable degree.

Mr. A. applied to me in the hope of profiting from those means by which I had succeeded in restoring some rheumatic gouty limbs, as detailed in my Treatise on Rheumatism. I began with gentle percussion to the sacrum, the glutei muscles, and the course of the sciatic nerve; with the view of exciting the action of the nerves supplying these parts, and of eliciting a transmission of nervous power from the spinal marrow. This operation was soon followed by increased command and power of the limbs; but had not been repeated above three or four days, when increased discharge of blood from the rectum took place. Till this occurrence, indeed, I was kept in ignorance of the state of the anus, having my attention directed to the im-

becility of the limbs solely. I now gave up the idea of percussion as impracticable, and prescribed the most powerful liquid astringents to the bleeding surface, which was quite exposed to view, but with little or no effect. The patient requested me "to take up the veins as Dr. King had done," but I could perceive nothing but an oozing from an extensive surface. I had now recourse to nitrate of silver as an internal astringent, in the quantity of a sixteenth of a grain three times a day. I was agreeably surprised when, after two or three days had elapsed, the patient informed me, the sense of fulness which he always perceived to precede a discharge, had totally left him, and that the discharge itself, of blood, was also greatly diminished. In a short time, the bleeding ceased altogether, and the gleety discharge also began to be sensibly diminished. I wished, at this period, to increase the dose of the medicine, but found it impracticable, on account of the excessive perspiration it occasioned—an effect this, which was not, *a priori*, to be expected. But even with the minute quantity of a sixteenth of a grain three times a day, sometimes only twice a day, and sometimes omitted altogether, the gleety discharge had, in two months, ceased almost entirely, the sphincter resumed its functions, and the anus contracted and puckered in the natural way.

Such mighty effects may be considered by the reader as out of all proportion to a cause apparently so trifling; unless he is disposed with me, to infer, that the nitrate of silver, as an internal remedy, has hitherto been overlooked, and its powers under-rated. It cannot be supposed, that three-sixteenths of a grain of nitrate of silver could come in contact with the whole surface of the intestinal canal. Had it even been applied directly to the bleeding surface, I am convinced it would have had no beneficial effect. The effects produced must, therefore, have been through the system.

CASE 2. Helen Thomson, aged 32, of a cadaverous countenance, and whose cousins and sisters all died of consumption, came under my care on the 9th of January, 1817. She complained of great general debility; of profuse perspiration on the slightest exertion; of frequent giddiness, especially on



turning quickly round; and of a sense of weight in the back part of the head.

The state of the pulse I could not satisfactorily ascertain, as I never saw the patient but after, what was to her, a long walk. From the history she gave me of her family, more than from her present symptoms, I considered this woman gone. I prescribed two dozen of pills, each containing an eighth of a grain of nitrate of silver; one to be taken morning, mid-day, and evening. On the 19th she returned, quite delighted with the beneficial effects of the pills. I now ordered them of one-fourth of a grain each; and she continued taking three a day till about the end of February;—in all, eight dozen. She had now recovered her strength; the sweatings were checked; and she could do her work, being a servant, with perfect ease. I saw her again in the street, about the middle of summer, full of flesh, and apparently in perfect health. With the exception of a laxative pill, occasionally, this patient had no other medicine than the nitrate of silver; and she described its invigorating effects as almost instantaneous.

CASE 3. Mr. William Elliot, aged 19, came under my care on the 20th of October, 1816. He had been complaining for nine months back, of pain in the breast, attended with cough and dyspnœa, the latter attacking him in paroxysms almost to suffocation; had had a good deal of medicine from different practitioners, but found himself getting weaker daily. He was now, indeed, very much reduced, and unable to take much exercise in the open air. I was called in to him at first in a great hurry, owing to his being suddenly seized with a most violent stitch under the short ribs, right side. From the state of his pulse, I was no way apprehensive of inflammation, and therefore satisfied myself with the application of percussion for two minutes, by which he felt himself greatly relieved, and was enabled to turn himself any way he pleased. In about a quarter of an hour he became very sick, and vomited a quantity of greenish yellow substance, very offensive to the taste, and was immediately and entirely relieved of all his complaints. I ordered an aperient medicine. On the 4th of November I was again called in a very great



hurry, and found the young man labouring under a tremendous fit of asthma, with a frequent, full pulse, and considerable heat of skin. I took fourteen ounces of blood from the arm, with some relief of symptoms. Next day he had another paroxysm of asthma, when I ordered him a grain pill of opium. This had the desired effect, not only at this time, but ever afterwards; nor was it ever necessary to increase the dose of opium. One grain, taken when a paroxysm was threatened, completely checked it. Finding, however, that debility, emaciation, and sweating continued, I began, on the 25th of November, with the nitrate of silver, in the quantity of a sixteenth of a grain twice a day, or, as sweatings occurred. This had the effect of moderating the sweating. On the 9th of December, I increased the dose to an eighth of a grain, to be taken at any time, by day or night, when menaced with profuse perspiration. On the 11th December, the dose was increased to a fourth of a grain. The patient's strength was now evidently improved, and he checked the sweatings at any time by taking one pill; nor was the asthma or cough at all troublesome. He continued the nitrate of silver pill till about the end of June, a rhubarb or aloetic pill being now and then interposed to keep the bowels regular, as the nitrate of silver had rather a constipating effect. Every symptom of disease had now disappeared; the patient had recovered flesh, strength, and a healthy appearance. I considered his recovery complete. About the middle of September, however, he was seized with heart-burn, which, in a few hours, was succeeded by vomiting a considerable quantity of a dark-coloured substance, so thick and tenacious, that it might have been suspended on a stick. Upon this, the patient was again perfectly well; nor did any of his former symptoms return. I ordered him some laxative medicines, but the same phenomenon recurred repeatedly at short intervals. I had now recourse to the blue pill as an alterative, and with the happiest effects; of these he took five dozen in the course of September and October, when he gave over all medicine. Through the course of the succeeding winter, he had few complaints, and used as little medicine. On the approach of spring, however, he was

again menaced with a return of heart-burn and asthma; symptoms which were immediately checked by emetic tartar, exhibited in the form of pill, and in the quantity of a fourth of a grain at bed-time, as occasion required. If there was any affection of the liver in this case, the blue pill seemed to have a good effect on it; but emetic tartar a better: and I regret much I did not exhibit this latter medicine sooner. I cannot but attribute, however, the first check the original complaints received to the nitrate of silver.

CASE 4. Mrs. W. a married lady, about 36 years of age, of a fine delicate complexion, and who never had any children, consulted me in May 1817, with regard to fluor albus, under which she then laboured, and to which she had been occasionally subject for some years. I prescribed a lotion, as the acrid nature of the discharge occasioned some uneasiness, and the nitrate of silver pill. She took only two dozen of one-fourth of a grain each, when the discharge disappeared. My patient was very much surprised at the decided effects of the medicine; as she had been, on a former occasion, under the care of an eminent surgeon for the same complaint, and experienced little relief for a great length of time, although she used a great deal of medicine internally.

CASE 5. On the 2d of August 1817, I was consulted by letter, in the case of Mr. Thos. Coutts, Kinross-shire. Five weeks previous to this, Mr. Coutts was seized with cough and spitting of blood, which continued for a week, when he was bled in the arm to the amount of "fourteen or sixteen ounces." In a few days the spitting of blood returned when a blister to the breast had the effect of again stopping it. The patient was extremely weak, and had little or no appetite. Pulse ranged from 80 to 95. I recommended the nitrate of silver, one-fourth of a grain, four times a day. On the 20th I had a return from the patient himself, stating, "I cannot say much yet, only my stomach is better, and my breathing a little more free. I sleep fully as well, and do not sweat in the night so much. What I spit is not so gross; it is more mixed with spittle, or something the appearance of common spittle." On the 10th of September, after complaining of being much ha-



rassed with cough, he says, "I have taken three pills every day, finding four too many for me; but as they are the best thing that I have got, you may send me another box or two." I now desired the patient to give up the pills for a few days, in order to ascertain if they were of any real benefit. With this advice he complied; and on the 17th informed me, "I tried to want the pills, but it would not do. I did not feel much the first day, but the second I was very bad in my breathing, and could not say how in my inside; so I began again, three in the day." On the 15th of October he requested me to send him another box of pills, adding, "perhaps I may not need any of them; but if I do, (meaning if he lived) I cannot want them. You will be sure to send it this week." He died in about ten days after.

It is evident, from the patient's own account, that in his case the nitrate of silver obviated the formation of pus, and improved its quality; that it checked the hectic perspiration, and facilitated perspiration by supporting the tone of the system.

CASE 6. Mr. S. about 36 years of age, of a strongly marked scrofulous habit, and having had for many years a copious purulent discharge from the lungs, and difficult respiration, was attacked last summer with what was deemed confirmed consumption. After being greatly reduced, and confined for some time to the house, he came abroad again, still discharging immense quantities of purulent-looking matter, of a bad smell and taste. His return to the world was considered by his physician, and with much reason, a temporary respite only. About the middle of July he consulted me. I instantly put him upon nitrate of silver, a fourth of a grain four times in the day. Having taken three dozen of pills in this way, he returned for a supply; informing me, that the sputum was reduced in quantity, and entirely deprived of its bad taste and smell; and that he now coughed with a vigour, and expectorated with a freedom, to which he had been long a stranger. In the beginning of August he went to the country, carrying along with him twenty dozen of the pills, which he was directed to take as he found them affect him. He returned to



town in the beginning of October, much improved in every respect, and having exhausted his stock of pills. He now took other four dozen, when he dropped them altogether, having no further occasion for medicine.

I will not say, that in this instance nitrate of silver cured phthisis; but from the authority of the patient, and the testimony of my own senses, I affirm, that the quantity of sputum was diminished, and its qualities improved; and that a tone and vigour was communicated to the constitution, which no other medicine with which I am acquainted could have imparted.

CASE 7. Mrs. Simpson, aged about 30, of an extremely fine complexion, and delicate frame, consulted me in November last, with regard to her general health, which was much impaired. She exhibited, indeed, the appearance of being far advanced in phthisis. I found she had laboured for some time under fluor albus; and that the discharge was copious, extremely acrid, and accompanied with distressing pain in the region of the uterus. I immediately put her on the nitrate of silver pill, with immediate and great good effect. The pain went off in three days, and the discharge was lessened in proportion. In less than a fortnight she felt her strength considerably improved, and in every respect much mended. She continued the medicine about a month, at the end of which she was perfectly free from complaint. I cannot, indeed, convey an adequate idea of the change, for the better, produced on this interesting and delicate female.

CASE 8. Mrs. M. who had been married several years, but had no children, tall, slender, had constantly an eruption all over her face of a fiery red, and who had not menstruated for several years, became subject to an abscess in a particular spot, within the left *labium pudendi*, of frequent recurrence. She underwent three courses of mercury, but the complaint perpetually recurred. At length, I prescribed nitrate of silver with the happiest effects. Not only did the discharge disappear, and the ulcer heal up kindly, but the whole habit of the patient seemed to undergo a revolution; her face even became less fiery and red, symptoms of the return of the catamenia began

to manifest themselves, and she felt herself better than she had been for several years before. It was with some difficulty I could persuade this patient to drop a medicine from which she had experienced so much benefit.

CASE 9. A lady, advanced in life, was seized with a pneumonic affection, accompanied with colliquative perspiration. As soon as the pain of the chest was subdued, which was effected *without blood-letting*, and that the patient could make a full inspiration, nitrate of silver was exhibited. The perspirations were immediately checked, and the strength of the patient was quite restored in a short time.

CASE 10. A young man was attacked with slight, obtuse pain in his chest, for which he took advice, but of what nature I know not. When I was consulted I found him much reduced by colliquative perspiration. This was, indeed, his only complaint: and the nitrate of silver removed it entirely in a very few days.

I have exhibited nitrate of silver in obstinate gleans from gonorrhœa; and in many instances with perfect success, after all the usual remedies had been tried in vain. I have likewise failed in some cases; but believe it was more owing to the medicine not being carried a proper length, than to its inefficacy. In some cases I have made a cure in a very few days; in others, a considerable time elapsed before much effect was produced. One gentleman had been repeatedly under my care for gonorrhœa, which in every instance was difficult of cure. The patient had a cadaverous, unhealthy appearance. The last time he consulted me, I prescribed nitrate of silver, after the inflammatory symptoms were subdued; and with immediate good effect. Not only was the discharge quickly dried up, but the patient described himself as having acquired a tone and vigour to which he was formerly a stranger. It was with difficulty also that this patient was persuaded to give over the medicine.

Such are some of the effects I have observed from the internal use of nitrate of silver—effects which entitle it to more attention than has yet been bestowed on it. From the preceding statements, it is evident, that it possesses anti-purulent



powers in no common degree; and, that in depraved and relaxed habits, it is a remedy that has no rival.

W. BALFOUR, M. D.

*A Memoir on Stuttering:—*ψαλλισμος or τρεσυλισμος, of the Greeks, *balbuties, hesitatio lingua*, of the Romans. By M. ITARD, Physician to the Deaf and Dumb Institution of Paris. [Translated from the *Journal des Sciences Medicales*.]

[From the London Medical and Physical Journal, for May 1818.]

STUTTERING is one of those impediments of the functions, which, placed among our infirmities on the borders of the medical domain, has never seriously engaged the attention of physicians. The rich productions of ancient medicine are barren on this point. What Hippocrates, Aristotle, and Galen have said on it, is hardly worth quoting, and their silence on the treatment of psellism, seems to have devoted it to absolute incurability. This is the more surprising, as this defect must have been much more distressing among a people, where the art of speaking in public was intimately connected with the form of their government, and opened the road to the first honours and dignities of the state. Thus, we may remark, that those who were afflicted with this misfortune, consulted their own genius much more than the opinion of the faculty, as we learn from the manner in which Demosthenes, according to Plutarch, improved his pronunciation. Sometimes they had recourse to the gods. We read in Herodotus, that Batus, chief of a colony of Thereans, went to consult the oracle of Delphos on his stuttering, and that the advice he received was, to transport his penates under the burning sun of Lybia.

Our therapeutic of stuttering is hardly more enlightened than that of the Pythonissa was two thousand years ago. Some observations of pathological anatomy, collected by modern authors, far from throwing any light on this affection, would rather turn us aside from its real treatment, by making us consider stuttering as occasioned by some organic lesions; such, for example, as the two accidental conduits, which, according



to Sanctorius, were found in the middle of the roof of the palate, or the separation of the uvula, seen by Delius, (*Act. Nat. Curios. t. 8.*) or some defect of conformation in the *os hyoides*, if we may believe Hahn (*Commerc. Liter. for 1736.*) Morgagni has devoted some paragraphs of his letters X. XI. and LI. to the etiology of stuttering, but not precisely to that which we are now considering. He only notices those embarrassments of the tongue, which are the usual remains of apoplexy, or the frequent preludes of that overwhelming disease. We are indebted to Dehaën for five or six histories of stuttering, also symptomatic, produced by congestions in the lungs, particularly by the formation of a vomica, and attended with symptoms of hemiplegia owing to the same cause. Unfortunately, these observations, related in the *Opuscules inédits* of this illustrious practitioner, are very incomplete, and badly drawn up. Still there is a fact which deserves to be remarked. In three of these patients, the expectoration of the vomica was followed by the cessation of stuttering, and of the hemiplegia.

Menjot, Fick, and Bergen, who have published dissertations on stuttering, have multiplied their divisions, and have confounded this defect of speech with other imperfections of the same organ, without indicating any rational mode of cure. Sauvages, who, in his *Nosology*, has copied Menjot, deserves the same reproach. It must be acknowledged, however, that he formed a true judgment of the nature of this defect, by considering it as a weakness, and by placing it consequently in the class of *dyscinesias*. It is astonishing, that he should afterwards have placed in the same class, as species of the same affection,—lallation, mogilalism, iotacism, and other faults of pronunciation, which are owing to quite different causes.

Such is the actual state of science on this subject. Let us see what my reflections and experience have been able to add to it.

Stuttering is, as every body knows, a hesitation of the vocal organs, by which certain syllables, that require a more or less marked action of the organs of the voice and speech, are pronounced with difficulty, and with a stammering repetition of certain sounds. This defect of pronunciation is not observed in children, till having attained the age when their speech

should be clear and easy, they continue to show hesitation and embarrassment in the articulation of sounds. Not but that with some attention we may perceive it, even in the first years of life, and may distinguish that imperfect articulation of sounds, those half-formed words, which mark the language of childhood from those defective repetitions of a monosyllable which constitute stuttering; but, whether from mistakes on the nature of this defect, or from hopes that it will disappear, no serious attention is paid to it till towards the seventh or eighth year; when this inconvenience, far from diminishing, becomes more apparent from the timidity of the child, and increases till beyond the age of puberty. As manhood advances, it generally diminishes remarkably, and often disappears at the approach of old age. It has sometimes been completely dispelled by an acute disorder. Timée (*Casus Medicinales*) gives the history of a stuttering child, who recovered the free use of speech about the age of eleven, in consequence of a quotidian fever. What is very remarkable, stuttering is very rare in women; and, were I to judge from my own observations, I should pronounce them totally free from it, never having seen one afflicted with it.\*

To determine the cause of stuttering, we need only examine for an instant the principal phenomena which attend it. We may remark particularly, that what distinguishes this impediment of the vocal functions from all others, is, that it is subject to variations of intensity depending on the moral state, which form the principal characters of nervous debilities. We may add, that among all our organs, there are none which are so completely dependent on the emotions of the mind as the organs of the voice and speech, and that, therefore, their spasmodic affections must be excited by the least agitation of the internal senses. This is precisely what happens in stuttering. Persons affected with it feel it much more in society, before a large assembly, in anger, impatience, and even in a transport of joy. In the bosom of their family, or in the calm of solitude,

\* The English Editor knew a case in a lady not less than fifty years of age. The impediment in speaking was considerable; but the lady could read with great propriety, and without difficulty.



they speak much more freely. It diminishes also, and even disappears, if the voice is pitched on a different tone from that of conversation,—as in declamation and singing. I was consulted by a stutterer, who informed me, that he ceased to stutter when, in a large company, it grew dark, and candles were not brought in for some time, so that he could not be observed by those he was speaking to. In his youth, his parents had attempted to profit by this observation, by blindfolding him, but without success.

In the usual way, the hesitation of the tongue is particularly observed in the articulation of the consonants *K, T, G, L*; but when, from any of the reasons I have mentioned, the spasm of the vocal organ is increased, the difficulty of articulation extends to a greater number of consonants: the labial, lingual, or nasal consonants, are equally repeated; the sounds even which require only a simple emission of the voice, are, in a manner, choked in the larynx; and, the convulsive spasms, after having seized all the muscles which contribute to the voice and speech, extend to some of those of the face, and occasion very distressing distortions.

In some individuals, even the muscles of respiration, and particularly those which perform inspiration, partake at intervals of these convulsive motions, which produce a great number of aspirated sounds, that precede, or interrupt, in a disagreeable manner, the easiest words to pronounce. It was, no doubt, in illusion to this sort of stuttering, that Catullus says, in an epigram against one Arrius,—

“Chommoda\* dicebat, si quando commoda vellet,

“Dicere, et hinsidias, Arrius, insidias.”

\* The study of these defects of pronunciation in the works of the ancients, can alone throw some light on the manner in which they articulated sounds, or rather on the difference between their pronunciation and ours. Thus we see, by the first of these two verses, that the Romans pronounced the *h*, even when placed between the *c* and a vowel; while, in our method, it is dead to the ear, since we pronounce in the same way the first syllable of *chorus* and *coram*.

[It must here be remarked, that the French, and most other nations, are ignorant of the English sound of *ch* in *chair* and *chamber*, always giving it the pronunciation of our *sh*. The Italians soften their *c* into our *ch*, or, as other nations call it, *tch*.—ENG. EDIT.]



It is impossible not to discern in these phenomena of stuttering a spasmodic affection, and which is the result of a weakness in the moving powers of the tongue and larynx. But it is not in the marked and lengthened motions of those muscles, that this debility is perceptible. I performed some minute experiments on the tongue of a stutterer, with the design of ascertaining if its sensible motions were less free, less extensive, less powerful, than my own, but could find no difference. It is only in its delicate imperceptible motions, that this moveable organ wants the force, or rather the necessary solidity, to execute them with precision. A phenomenon may here be observed, which is more evident in some organs of motion whose functions are more easily perceptible. The muscles of the fingers, for example, may be endowed with that powerful contractility which constitutes what is commonly called a strong fist; and, at the same time, may exhibit, in those slight motions of contraction and relaxation which delicate work requires (such as writing,) that hesitation and shaking which are seen in weak organs.

Notwithstanding, in cases of stuttering brought on accidentally from an apoplexy, or adynamic fever, in the embarrassment which precedes some affection of the brain, all the motions of the tongue are visibly weakened. If, to be surer of it, the tongue is kept for some seconds out of the mouth, it vacillates, trembles, and yields to involuntary motions, which give it a different position from that which is attempted, and which it can only recover with hesitation. It may be remarked, in the same case, that the act of mastication and deglutition is slower and laborious. Moreover, the complete asthenic character of accidental stutters, which all manifestly belong to paralysis, evidently show the nature of the congenital stuttering, and, I think, it cannot be doubted that their proximate cause is the same, with a few modifications; and that is, the weakness of the muscles. But is this weakness essential or symptomatic? Or, to express myself more clearly, does it reside in the muscles of speech, or is it only the consequence of some other defect? In the stuttering from childhood, I consider it to be essential; but, when it comes on suddenly, or by de-

grees in the course of life, it seems to depend on some affection of the brain, or some organic lesion of the instruments of the voice and speech, such as tumours at the basis of the tongue, or on the passage of the great hypoglossal nerve.—*Riviere.*

Can stuttering be cured?—I have no doubt of it; and, what I shall say directly, when speaking of the treatment of it, will help to confirm this prognostic. Many persons afflicted with this imperfection, and strongly sensible of its inconveniences, with an anxious desire to be freed from it, have succeeded by perseverance, particularly when seconded by the progress of life, which tends to diminish this defect, either by blunting that fear of displeasing which occasions timidity, or by fortifying the muscles which serve for the emission and articulation of sounds. One of the presidents of the Convention, famous for his heroic coolness and imposing eloquence in the midst of a scene of horror, was born a sutterer; but had struggled with so much success against it, as at last to overcome it. I know some other facts equally encouraging. One may hope still more, if the stuttering is in a child that has begun to speak later than usual, either from general weakness or from worms, which have often occurred, or remained long. In these cases, the epoch of puberty concurs powerfully towards the cure, by fortifying the constitution, and giving more firmness to the organs of speech. However, when the embarrassment of the tongue is considerable, the approach of puberty is insufficient to dispel it, and we must have recourse to the medical means which I shall now point out.

The proper means for curing stuttering vary according to its duration and intensity. If it be a child in whom this defect is complicated with a great volubility of the tongue, and with a confused and defective articulation in general, we must attempt to put some bounds to this immoderate use of speech, by making him spell, read with a loud voice and deliberately, often making him come back to the articulation of the syllables which he finds most difficult. Yet this method is not equal to the one which I have tried twice with the greatest success. It consists in confiding the child entirely to a foreign nurse,



who, only knowing the language of her own country, forces the child to learn slowly, and to give up for some years that which he had learnt too quick. To this plan, I once added that of keeping the organs of speech in complete repose and silence for a whole year; as, from continual hesitations and involuntary fatiguing repetitions, they appeared to me to be prematurely charged with a function beyond their strength.

These means produce but little change, when the individual has passed the age of adolescence. At this epoch the practice of declamation would be very useful. He should begin by that, which, being the most remote from the tone of conversation, requires more slowness and precision in the motions of the tongue, a louder voice, and longer kept up,—as in tragedy or preaching. From that he will proceed to more familiar declamation; and, at length, to reading comedies in prose; performing these exercises as much as possible before a numerous society.

In all cases, it is of much importance, in order to carry on the cure with method, to distinguish what is fundamental and permanent in this defect, from what arises through anxiety and apprehension on speaking in society, or in public; for, if the stuttering was always the same, (which is exceedingly rare,) or but little susceptible of variation, it would be sufficient to exercise frequently the organs of speech in the articulation of difficult sounds to remove the impediment. These practices, so advantageous in the case we are speaking of, are not useless in any, and I cannot recommend them too strongly. But, to proceed with method, one should thoroughly know the theory of vocal sounds, both simple and articulate. For this, the works of Wallis, Ammann, and the Abbé Lépée, should be carefully studied, and which, on that account, I shall not discuss in this memoir. To the precepts of these writers, I shall only add one important particular, which none of them have mentioned; which is, that it is not sufficient, in order to familiarise the tongue with the articulation of sounds, to study the mechanism of that articulation, and subject it to frequent repetitions, but that we must exercise ourselves with these articu-



late sounds in all their possible combinations. A syllable which is fairly pronounced, if preceded by another which leaves the tongue in a favourable situation for overcoming the difficulty, will not be so easy, if it follows some other which has not that advantage, or if it forms the beginning of a word or phrase; just as one consonant will occasion more frequent or stronger stuttering, if connected with such and such a vowel, than with another; which is commonly observed in the letter *c*, which stutterers pronounce with more difficulty when it is followed by an *a*, than when it precedes an *o*.

But, when the stuttering is susceptible of increase, and the embarrassment extends to a great number of syllables, and even simple sounds, it is not sufficient to render the articulation of sounds easier and more correct; we must then endeavour, by the application of mechanical means to the organs of speech, to augment their strength in overcoming the spasmodic susceptibility. We must do for the muscles, destined to the formation of speech, the same as is practised for the muscles of locomotion, to which steadiness and suppleness are given in proportion as they are employed in various or fatiguing exercises, such as dancing and fencing. From this comparison, and in order to obtain an analogous exercise from the muscles of the tongue and lips, I render their motions more difficult and laborious by obstacles placed in the mouth; and, notwithstanding the great uneasiness they occasion, one must still talk, shout, sing, and whistle with them frequently. At first, it is impossible; but, after some days, and by repeated efforts, the muscles, overcoming the impediment, recover their motions, and, what is more, with greater steadiness. To produce this desired effect, I make use of a very simple instrument.—It is a sort of little fork, made of platinum or gold, which rises from the concave centre of a flat and bent stem composed of the same metal, and applied with its convex side to the concavity of the alveolar arcade of the inferior jaw-bone. The fork, which is supported by this metallic arch, is an inch long, more or less, placed in a horizontal situation opposite the *frænum*: it receives that membranous check in its bifurcation; while its two branches, terminated each by a flat

button about the size of a bean, rest on the inferior side of the tongue in the returning angle which it forms by its union with the inferior side of the mouth.

This instrument is scarcely fixed in its place, when, as I have said above, a confused and embarrassed voice is heard, very analogous to that which characterises the erosion or congenital division of the veil of the palate; but, what is remarkable, quite free from stuttering. The most difficult syllables are painfully articulated, but by no means repeated; and this favourable change still continues, even when the organs of speech, accustomed to the instrument, have recovered the freedom of their motions, and can pronounce sounds clearly articulate. However, if this mechanical support be too soon removed, the stuttering comes on as before; it must, therefore, be kept on a long time, and, when it is necessary to remove it, as for eating or sleeping, silence must be rigorously observed. I cannot precisely say how long it is necessary, being able to cite only two instances of a cure by this method. One was a young man twenty years of age; he kept this sort of *bit* in his mouth for a year and a half, and found it so little troublesome at last, that, during some months, he did not even take it out to eat. The perseverance with which he bore this apparatus arose from a motive which, at that age, will make one undertake and support any thing,—the hope of pleasing a young woman with whom he was violently in love, and whose coldness he attributed merely to his unfortunate stuttering. His complaint, indeed, was very bad, and subjected him to convulsive exacerbations of the muscles of the mouth, nose, and eye-lids, which made speaking both painful to himself and unpleasant to the company. His success was complete; but I never heard whether he obtained the object of his wishes.

The second object of my observation was a boy eleven years old, who could not feel the same motives for perseverance. He was very impatient with the instrument, and took it out of his mouth whenever he was not watched. Notwithstanding which, when he was brought to me after eight months, the stuttering was considerably diminished; and, though I have heard nothing more of him, I am almost certain that a few



months more would have completed a cure. At the moment I am writing this, a young man, passed thirty, who one day or other will take his hereditary seat in the Chamber of Peers, has subjected himself to the same treatment with a constancy and strength of mind inspired by the most noble motives. A sensible improvement, within a few weeks, gives me reason to think, that I shall not have undertaken his case in vain. The instrument which I have had made for this young man is much more perfect than those which I previously employed. I am indebted for it to the skilful hand of Pernet, the dentist. Moveable branches, shorter or longer, more or less divergent, allow the pressure on the muscles of the tongue to be increased, and the resting points to be varied. I have seconded the effects of these mechanical means by tonic gargles, made with an alcoholic tincture of bark, cantharides, and other stimuli.

There are few cases of stuttering in which this last method might not be used with advantage. I must, however, except that sort of stuttering (very rare indeed) in which the organs of the voice, much more than those of speech, appear to be the seat of that spasmodic hesitation which suddenly suspends the formation of words. It is perceptible from the sounds appearing, as it were, to be stopped in the larynx; and it becomes evident, if, on attempting to pronounce with some haste a long series of vowels, the difficulty still recurs. In this case, most advantage will be derived from the practice of vocal music, and particularly from that exercise of the voice which consists in stringing sounds together. These means may be seconded by some local tonics. Moxa, on the sides of the larynx, and the *os hyoides*, might have the happiest effect. I recommended it once in a stuttering of this kind; but, the patient taking alarm, it was not employed. In prescribing this mode of excitation, I was guided by the good effects which I have often observed from it in chronical aphonia, essential dumbness, and other lesions of the voice and speech, which will form the subject of another memoir.



*Case of Varicella.*—By Dr. M<sup>c</sup>ARTHUR, M. D. F. L. S.  
Walmer, Kent.

[From the Medico-Chirurgical Journal and Review, for January, 1818.]

THE frequently alleged failure of vaccination, in preventing small pox, is a matter of deep regret, because these reports prevent some parents from submitting their children to vaccination, since it does not promise them absolute security; and, therefore, in many parts of the kingdom, partly from this cause, and partly from the want of agreement amongst the medical practioners themselves, inoculation for small-pox is occasionally practised; and thus, a disease continues to be perpetuated, which the friends of humanity had hoped would have been banished by this time from the catalogue of human ills.

Within the last nine years my attention has been directed towards the supposed cases of small-pox which had succeeded vaccination, and many instances have been pointed out to me, but the disease in every case proved only a severe degree of chicken-pox; and I should have been led to suppose, that small pox as rarely occurred in a person that had been properly vaccinated, as after the inoculated small-pox itself, were it not proved to the contrary by the evidence of men of the first talents and respectability.

It is a trite observation, that diseases occurring during the prevalence of any epidemic, partake, in a considerable degree, of its nature and severity; and I have often remarked varicella to be more severe, when it has occurred at the time a bad kind of small-pox or measles has prevailed.

The preceding observations are intended to introduce a Case of chicken-pox, which for some days had deceived me; and had I quitted my patient on the fourth day of the eruption, I should have left her, persuaded that the disease was a case of legitimate small-pox; although some of the symptoms appeared earlier than common. I subjoin the Case in the *ipsisima verba* of the memoranda I took at the time.

" I was this day, the 17th of June, 1816, requested to visit Miss M'K——, aged about 13 years. Had been vaccinated ten years ago at the Naval Hospital, and a cicatrice is evident on her right arm. Mr. Howell, a surgeon in the royal navy, and a friend of the family, states, that on Saturday last, the 15th instant, she complained of a loss of appetite, with pain and uneasiness in the region of the stomach; skin hot and dry; head-ach, anxiety, thirst, and some difficulty in swallowing, but unattended with pain. On Sunday the 16th, the febrile symptoms had increased; there was much delirium; pulse 150. Mr. H. abstracted ten ounces of blood from the arm, and opened her bowels with the sulphate of magnesia. This day delirium was less; heat of skin abated; pulse 150. An erythrematous inflammation occupies the face, neck, arms, and particularly the abdomen; but has not extended to the lower extremities. To be kept cool, and her bowels to be opened with the sulphate of magnesia. Tuesday the 18th, a crop of small pustules appears on the face and neck, and a few are appearing on the arms; the inflammation extends to the lower extremities; delirium gone. Wednesday the 19th, the eruption on the face and upper extremities very full; a considerable number has appeared on the lower extremities; no pustules on any part of the abdomen; the efflorescence has nearly disappeared on the face and arms; on the abdomen it is of a less vivid colour, and very much resembles the red-gum in children; pulse 100; tongue clean; some enlargement of the tonsils, and pain in swallowing. Thursday the 20th, pustules every where increasing in size, and more elevated; eye-lids swollen; soreness of the throat, and increased flow of saliva; pulse 96. Friday the 21st, pustules still increasing, and filling with a straw-coloured fluid; confluent on each side of the nose; eyes closed; pulse 100. Saturday the 22d, pustules on the face depressed and beginning to blacken; on the extremities they are stationary, containing a whey-like fluid; face less tumid; soreness of the throat abated; can open her eyes, and seems altogether better. Sunday the 23d, pustules on the face dry and shrivelled, those on the arms depressed; on the lower extremities they continue much as before: neither ptyalism nor soreness of the



throat. Monday, the scabs on the face are already nearly dropped off, leaving a horny elevation occupying the centre of each pustule; the eruption on the extremities disappearing. In a few days after this period, the scabs had entirely dropped off, leaving her in perfect health. The erythrematous inflammation which preceded the eruption of the pustules disappeared as the latter increased in size. It is singular, the pustules did not extend to any part of the abdomen."

Walmer, Deal, March 30, 1818.

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*On the Medicinal Properties of Stramonium; with illustrative Cases.* By ALEXANDER MARCET, M. D. F. R. S. *Physician to Guy's Hospital.*

[From the Medico-Chirurgical Transactions, Volume VII. Part II.]

HAVING seen, within the last few months, several instances in which Stramonium, or the Thorn-apple\*, taken internally in the form of extract, has appeared to relieve acute pains of various kinds, more effectually than any other narcotic medicine; and the properties of this plant, as an internal medicine, not having, to my knowledge, been yet particularly investigated or described by any English medical writer, I have thought it my duty to submit to the Society the result of my observations on this subject.

The inhalation of the smoke of the *Datura Stramonium* for the relief of asthma, a practice introduced within these few years, is, I believe, in some instances attended with unquestionable benefit, and is frequently resorted to in that disease. Indeed this plant, which grows wild in this and many other countries, and is more especially met with in dunghills and among rubbish, is now cultivated in some English gardens for

\* *Datura Stramonium* of Linnæus. An herbaceous plant, with a thick branched stalk, two or three feet high, large sinuated indented leaves, and long tubular white or purplish flowers succeeded by large, prickly, green, fleshy seed-vessels, which open at the end in four divisions, and disclose numerous black seeds. It flowers in July.



the purpose just mentioned. It is chopped into small pieces and smoked like tobacco; and though often ineffectual, it has acquired no inconsiderable repute among asthmatic persons.\*

The effects of this plant as a poison, when taken internally, have long been noticed in medical works, both in this and other countries: amongst those of American writers in particular, several tracts are to be found on this subject†. In Europe, the poisonous effects of Stramonium are also mentioned by many authors. Boerhaave, amongst others, seems to have been well acquainted with its deleterious effects; for it is stated upon his authority, that "some boys, who had eaten the seeds of Thorn-apples, were seized with giddiness, horrible imaginations, terrors and delirium, and those who did not soon vomit, died." And Dr. Woodville relates, on the authority of Dr. Haygarth, an instance in the town of Chester, in which several children who had swallowed some of the seeds of Stramonium, were seized with blindness and a kind of madness, biting, scratching, shrieking, laughing and crying, in a frightful manner‡. It had been observed also, that these effects, when the quantity taken was but small, though still very peculiar, were not so formidable; and it is even mentioned by Kempfer and Prosper Alpinus, that the Turks and Indians, who are not allowed to drink wine, sometimes take Stramonium in minute doses, on account of its exhilarating property.

As a medicine, however, it is in the writings of modern German practitioners, that I find the earliest records of its effects; and although it obtained, many years ago, a place in the Edinburgh Dispensatory, it was evidently rather upon the authority of German writers, than from the experience of British practitioners. Dr. Störck of Vienna was, I believe, the first who expressly wrote upon the medicinal effects of Stramo-

\* An ointment prepared from the leaves of Stramonium, has also been found to give ease in external inflammation, and in hæmorrhoids.

† Vide Samuel Cooper's inaugural dissertation on Stramonium, 1797, published in Caldwell's *Selected medical Theses*, Philadelphia, 1805; and Bartram, in *Transactions of the college of physicians, of Philadelphia*, I. 198, &c.

‡ Woodville's *Medical Botany*, II. 339. Other instances of a similar kind are related in the *Edinb. Med. Comment.* Vol. V. 161.

nium. So far back as the year 1762\*, he published a tract on the virtues of this plant, from the expressed juice of which he prepared an extract, which he administered in the dose of from half a grain to one grain, three, four, or even six times a day. He tried it in cases of mania, epilepsy and convulsions. Dr. Wedenberg of Upsal†, and Dr. Odhelius of Stockholm, repeated these trials in the same class of diseases; and the aggregate result of their experiments, though in some instances successful, and shewing the remedy to be possessed of great powers, was certainly not upon the whole very favourable‡.

In these, and a few other trials by German practitioners, the mode of preparing the medicine was various. Störck, as I have just mentioned, made an extract from the plant; others used the powdered leaves, in the dose of from one to five grains. Sometimes also a decoction of the whole plant was employed. As to the largest dose administered, I find as much as thirty grains of the extract stated to have been given for a dose\*. But from what I shall presently relate of the effects of this medicine, that statement will appear scarcely admissible.

In these early trials, the effects which were most commonly observed when the medicine was taken in sufficient doses, were vertigo, a sense of dryness and suffocation in the throat, and a peculiar affection of the eyes, sometimes attended with sleepiness, and even in some instances with a degree of delirium. Some writers† assert that it is apt to paralyse the iris and dilate the pupil, like the belladonna. Others mention the aperient

\* *Tract. de Stramon. Vienna, 1762.*

† *Wedenberg de stramonii usu in morbis convulsivis.*

‡ Dr. Samuel Cooper, in the work above quoted, which did not come to my knowledge till after this paper had been prepared for the press, contains the fullest account of the deleterious effects of *Stramonium* that I have yet met with. His experiments were tried partly upon men in health, and partly upon animals; and afforded some curious results, several of which coincide with my own observation. He relates also a few trials, made by himself and others, of its medicinal effects. These, however, are but summarily noticed, and add but little to our information on this subject. The preparation of the plant which was commonly used in his experiments, was the leaves in powder; and the dose was from half a grain to four grains.

\* *Murray's Apparatus Medicaminum, I. 458.*

† *Dictionnaire d'Histoire Naturelle, art. Stramonium.*



tendency of this medicine; but none of those whose papers I have had an opportunity of consulting, ascribe to it any constant or distinct effects on the pulse; nor do they seem to have noticed what appears to me to be the principal, and by far the most promising property of Stramonium, namely, that of allaying some of the most obstinate and severe kinds of pain.

The only form in which I have tried the Stramonium, is that of extract; and all the specimens I have used, with but one exception, have been prepared by Mr. Hudson, an eminent chemist and druggist in the Hay-Market; who has been so obliging as to favour me with the following account of his process, with permission to lay it before the Society.

“One pound of the *Seeds* of Stramonium, after being well bruised, are boiled with three gallons of water down to one gallon. The decoction is strained, and the seeds are again boiled, with one gallon more of water, to two quarts. This second decoction is strained, and being mixed with the former, the whole is allowed to stand for twelve hours. The liquor is then drawn off, free from fecula and oil, and evaporated to a proper consistence, the latter part of the evaporation being performed in a water bath. A considerable portion of oil is separated from the seeds by boiling; which is troublesome in the extract, if allowed to remain, and does not appear to add in any degree to its effect.

“The quantity of extract, yielded by one pound of seeds, is from one ounce and a half to two ounces; being liable to some variation from the state and quality of the seeds.

“An analagous extract is obtained by a process exactly similar, by substituting the *whole plant* cut into small pieces, instead of the seeds; but in this case none of the oily matter above-mentioned appears. The proportion of extract, when prepared from the whole plant, has not been ascertained.”

I have only to add to the above account, that, from the few comparative trials I have made of the two kinds of preparations, the extract obtained from the seeds has appeared to me considerably more active than that prepared from the whole plant; and the impression made upon my mind from these trials is, that the extract from the seeds is more certain in its



effects than the other, and that one part of the former is at least equal in power to two parts of the latter. But though the one appears to be so much stronger than the other, I am not able to point out any other difference between the two preparations. The form of pills is that which I have always used; but it would not be difficult to dissolve, or at least diffuse, the extract in some appropriate menstruum; so as to enable the prescriber, if necessary, to divide this powerful medicine into very small doses, with a greater degree of convenience and accuracy than the form of pills generally permits.

As to the probability of the Stramonium proving sufficiently useful to be adopted in general practice, no body is more sensible than I am of the great caution with which the statements of one individual, however candid, or the evidence of a few cases, however carefully related, must be received in medicine. The subject, nevertheless, will perhaps be deemed worthy of further investigation, and the annexed cases will appear entitled to the more attention, when it is remarked that I have made a point of mentioning the unfavourable as well as the successful results, a practice which appears to me indispensable in medical writings, and to which I have uniformly adhered on former occasions.\*

I do not by any means pretend to have yet acquired a competent knowledge of the properties of this medicine; but if I were called upon to express in a few words the general opinion which I feel inclined to form from the opportunities I have had of studying them, I should say, that the most common effect of Stramonium, when administered in appropriate doses,† in cases of chronic disease, attended with acute pain, is to lessen powerfully, and almost immediately, sensibility and pain; to occasion a sort of nervous shock, which is frequently attended with a momentary affection of the head and eyes, with a degree of nausea, and with phænomena resembling those that are produced by intoxication; to excite in many instances

\* See Essay on the medicinal properties of the oxyd of Bismuth, in the 5th volume of the Memoirs of the Medical Society of London.

† I mean from one-eighth to one grain, a dose which should not be exceeded till its effects have been ascertained.

nervous sensations, which are referred to the œsophagus, or bronchiæ, or fauces, and which sometimes amount to a sense of suffocation; to have rather a relaxing than an astringent effect upon the bowels; to have no marked influence upon the frequency of the pulse, though in a few instances it has appeared to render it somewhat slower; to produce but a transitory and inconsiderable dilatation of the iris and pupil; and to have but little immediate tendency to induce sleep, except from the the state of comparative serenity and ease, which generally follows the symptoms I have just described.

In some instances, however, as will be seen on perusing the annexed cases, the beneficial effects are obtained without the patient experiencing any of the uneasy sensations above-mentioned; while in a few others, the unpleasant consequences of the medicine have been experienced without any subsequent benefit.

I think it right to state, before I detail the cases, the accidental manner in which my attention was first directed to this medicine. About 15 months ago, as I was one day visiting my patients in Guy's Hospital, one of the medical pupils, then attending the hospital, (whose name I cannot recollect, else I should have great pleasure in mentioning it) informed me, by the bed-side of a patient labouring under excruciating pain from sciatica, that his father, a practitioner in the country, was in the habit of preparing an extract of Stramonium, which he found singularly useful in relieving those painful disorders. This gentleman at the same time offered me a few grains of this extract which he had with him, and which I immediately tried in the case in question,\* with the following result.

CASE 1. Jane Elsworth, æt. 30, was admitted into the hospital, on the 15th of April 1815, labouring under symptoms of Sciatica of long standing, with strong suspicion of disease in the hip-joint. The pains in the hip and knee were excruciating; and Cicuta, Hyoscyamus, Opium and blistering, were tried in succession without any relief, till the 13th of May, when half a grain of extract of Stramonium was given three times

\* In all the other cases related in this paper, Mr. Hudson's extract was exclusively used.



a day. The relief was immediate and very striking; but she uniformly complained, each time she swallowed the pill, of a peculiar sensation of heat in her throat, with a kind of spasmodic affection in her breathing, which however always went off after a few minutes. This remedy was continued till the 27th of May, when finding herself free from pain, it was omitted; but the pain soon returned, though not so severe as before; and at the end of three days, the pills being again resorted to, the same striking beneficial effects were produced. On the 5th of June the pains were so much subdued, that she was discharged as cured, feeling quite able to return to the care of her family.

CASE 2.—Peter Gahagan, æt. 30, became a patient in the hospital on the 27th of March 1816, complaining of acute pains in the loins and in the right hip, often shooting to the groin; and he stated that his complaints had begun four months before. He was cupped and blistered without any benefit. The warm bath, Guaiacum, and Opium were used without better success. On the 11th of May, a quarter of a grain of the extract of Stramonium, prepared from the seeds, was ordered to be taken three times a day. The relief obtained by this was so immediate and so complete, that he was able to walk out, and actually quitted the hospital of his own accord on the 13th, that is, after having only taken five or six doses of the medicine. Some time after this however, the sister of the ward was informed that he had relapsed.

CASE 3.—The case I am going to relate, though it ultimately proved fatal, and did not indeed at any time admit of any reasonable hopes of cure, appears to me to afford a remarkable illustration of the powers of Stramonium in diminishing sensibility and pain. It occurred last spring, in private practice, in a lady of great respectability, and of a clear and cultivated mind, who gave a much more distinct and satisfactory account of her sensations than most persons are able to do under similar circumstances. The general outline of this case was as follows. Mrs. T. about 48 years of age, had for some years past



been subject to a tumour in the right breast, which though evidently schirrous, and of a very large size, had never given her any considerable pain. The bulk of the breast however, and the tension of the skin had latterly become sufficiently troublesome to induce her to try, by the advice and under the management of Mr. John Pearson, the plan of treatment by bandages and pressure, as lately proposed by Mr. Young. This was persevered in for some months, and it was thought with advantage, the tumour having been sensibly reduced in size, and having become less uneven at its surface.

In the course of the last winter, however, whilst under this treatment, the patient was suddenly seized with acute pains in her loins, which were first considered as rheumatic\*; and three or four weeks after this, when apparently in a state of amendment, she was suddenly seized with what she called a crawling sensation in her left hip and thigh, extending down to the knee and leg, and occasionally shooting towards the groin and pubes. This sensation was almost immediately converted into pain of the most acute and excruciating kind, especially on attempting to move the affected parts; but without any distinct fever. Bleeding, blistering, opiates, *Cicuta*, *Hyoscyamus*, &c. were tried with great diligence, but with scarcely any sensible effect. Opium sometimes produced temporary relief, but it was used with great reserve, on account of the obstinate state of costiveness it was found to induce. When the pain abated for a short interval, she often felt a numbness or tingling in the affected limb, and a great disinclination, if not a total disability, to move it. It was found necessary at this time to discontinue the application of bandages to the breast, on account of the exquisite pain it produced in the loins and thigh, by the unavoidable change of posture it occasioned.

These symptoms had lasted about two months, during which she had constantly kept her bed, when I saw her for the first time, about the beginning of April last, in consultation with Mr. Pearson. It occurred to me that the *Stramonium* might afford some relief; and finding that Mr. Pearson had two or three times given that remedy with good effect, to patients la-

\* During the preceding winter this lady experienced a slight attack of the same kind.

bouring under severe pain, I proposed that we should give it a trial in this case. We accordingly ordered a quarter of a grain of the extract from the seeds, prepared by Mr. Hudson, to be taken three times a day, which dose was the next day increased to three-eighths of a grain three times a day. The result, even from the first dose, was very remarkable. The patient felt, within a few minutes after taking the pill, a peculiar sensation in her throat, which, notwithstanding her usual accuracy in expressing her feelings, she was at a loss how to describe. She compared it to a current of wind rushing up and down the inside of her throat, and producing a slight sense of suffocation. In the course of about a quarter of an hour however, the pain subsided sensibly, and soon afterwards entirely, and an uncommon feeling of serenity and repose, though not sleepiness, was experienced. These effects were reproduced whenever she took the pill; but, after a few doses, the recurrence of pain altogether ceased, so that at the end of four or five days the Stramonium was laid aside. About this time she suddenly wondered one morning that she had not passed any urine for twenty-four hours, and yet that she felt no call or uneasiness whatever. The catheter was immediately applied, and her urine drawn off without pain or inconvenience. On the following day her bowels being quite inert, she naturally connected this circumstance with the state of her bladder, and became exceedingly alarmed, under an idea that a mortification had taken place. By means of castor oil however, several motions were easily procured; but with very little if any control over the sphincters; and from this time no urine was ever discharged without the catheter, nor any motions obtained without the assistance of cathartics. About this period however, being refreshed by the absence of pain, her strength seemed for a time to recruit itself, and she recovered a considerable degree of appetite and cheerfulness; but she never again ventured to sit up in bed, partly from a sense of weakness in the loins, and partly from the dread of the pain which a change of posture might have brought on. She got so much better however, that the operation of strapping the breast was resumed; but it was soon found necessary to leave it off again on account of the fatigue it occasioned.

The further details of this interesting and melancholy case, and the various conjectures and speculations to which it gave rise, would be irrelevant to my present purpose. It will suffice to add that the paralytic symptoms above described did not in any degree abate, and that the strength of the patient continued gradually to decline, though the pain did not in any degree return. About the middle of June, she was carried in a litter into the country a few miles from town; and this removal, after her long confinement, far from giving her pain, afforded her exquisite enjoyment. Soon after this however, some gangrenous spots in the sacrum, which had been observed for some time, became highly inflamed and painful; her powers of digestion were more and more reduced, the prostration of strength became excessive, though the mind continued unimpaired, and on the 15th of July, death terminated her complicated sufferings.

CASE 4. Sarah Mears, aged 23. This is a case which has for some years, at different periods, excited great interest in Guy's Hospital, and given rise amongst the physicians and pupils to much controversy and discussion. The particulars of this young woman's long and problematic sufferings, will probably some day be made public, but would not be relevant to my present purpose. The following short outline of the case however, will be necessary to convey an idea of the effect of the remedy, the properties of which I have been endeavouring to ascertain.

The original symptoms were, so far back as five or six years ago, a tumour in the abdomen first inclining towards the left side, but afterwards occupying the whole abdominal region, occasioning in its progress exquisite pain with fever and extreme irritation, and yet not producing emaciation, and not permanently impairing the powers of the constitution, or disturbing the visceral functions. This tumour gradually increased to an enormous size, so as greatly to exceed that of a woman in the ninth month of pregnancy, and the pain became more and more intense, till at last enormous quantities of a sanious or puriform fluid, mixed with blood and serum, were



simultaneously discharged, partly by vomiting, and partly by the vagina and the rectum, and the patient soon recovered. In the course of a few months however, the complaint gradually returned with similar symptoms, which were again relieved in the same manner, and the tumour has now, for the eleventh time, gone through the process of filling and bursting, with extreme pain and subsequent sudden relief, in the way I have just described.

It was on this last occasion, on the 10th of April, during the formation of the tumour, the pain being at its highest pitch, and opium affording but little relief, though given in the dose of from six to ten grains, that the Stramonium was tried in the dose of only half a grain, three times a day. This remedy uniformly produced, about a quarter of an hour after being taken, some giddiness and dimness of sight, which lasted a few minutes; but the pain was immediately allayed for a few hours; and the same relief was experienced whenever the pill was repeated. But after continuing the Stramonium for five days, the contents of the tumour having been spontaneously discharged in the usual mode, and a truce to the pain having taken place, as on former occasions, the extract was discontinued. This time however, the cyst was not allowed to fill again; but on the contrary, the moment that the symptoms of throbbing and fulness recurred, the accumulating fluid was forced out by external pressure, and discharged both by the rectum and vagina. During the last three or four months, this operation, which is always more or less painful, has been repeated once or twice a week, and the reproduction of the tumour, at least to any considerable extent, has thus been prevented. Yet such is the tendency to inflammation in the diseased part, that cupping and bleeding, which have been practised during the course of this illness upwards of two hundred times, are still frequently required. Latterly also, the functions of the urinary passages have become so much impaired that the use of the catheter is daily required; and an habitual state of pain and irritation have been induced, which, though not equal in intensity to the fits of pain formerly experienced, yet

frequently require the assistance of narcotic medicines\*. This unfortunate young woman has now had such a long experience of disease, and has become so familiarised with the mode of using palliative medicines, that she has for a long time been allowed to take opium almost at her own discretion. But ever since she has become acquainted with the Stramonium, she has had recourse to it in preference. She takes it during the exacerbations of pain, in doses of from one half grain to one grain of the extract from the seeds, or about double that dose of the extract made from the whole plant, either of which affords her more relief than even half an ounce of laudanum, which she now occasionally takes at one dose without much effect. The Stramonium however uniformly affects her head and eyes, but this effect is only transitory. I one day requested her to take the Stramonium pill whilst I was in the hospital, in order that I might witness its immediate effect. In about twenty minutes after taking it, her eyes became dim like those of a person either extremely sleepy or in a state of intoxication, the pupils appeared somewhat dilated, and she seemed extremely languid and unwilling to speak. The pulse, which was rather quick, previous to taking the pill, had now become a little slower, though still rather above the natural frequency. In about half an hour however, all these effects had disappeared, and yet the relief obtained was still distinctly felt. Her bowels are generally open, sometimes relaxed, and scarcely ever require the use of aperient medicines.

CASE 5. Elizabeth Aines, æt. 27, was admitted into the hospital in June last, for pains of long standing, though of a very acute character, in the left loin, hip, and thigh, which symptoms appeared on examination to depend upon a disease of the hip-joint; the general constitution, however, having yet but little suffered. The Stramonium in this case, though used to a greater extent than in any former instance under my ob-

\* It may be proper to observe that the affection of the urinary organs began long before the Stramonium was used; and that it evidently originated from the pressure of the tumour on the distended bladder.



servation, did not afford any distinct relief. She began with half a grain of the extract from the whole plant, twice a day, the dose being gradually increased to one grain and a half, without any other perceptible effect than a slight momentary giddiness.

CASE 6. William Brown, a sailor, æt. 32, had laboured for about four months under strongly marked sciatica, combined with syphilitic pains, particularly in the shin bones. All the usual remedies, cupping, blistering, antimonials, guaiacum, and opium, in pretty large doses, had been tried without effect. In the month of May last, some weeks after his admission, the pain having become almost intolerable, half a grain of the extract from the seeds of Stramonium, was ordered to be taken three times a day. The first few doses had no decided effect; but being increased to one grain, this dose, on the first trial, made him very uneasy for about half an hour, when he suddenly felt much relieved; and this improvement continued for many days, though the use of the medicine was suspended. He now only complained of weakness and numbness along the course of the sciatic nerve, which numbness however he had occasionally felt before he began to use this medicine.

About the end of June, when in this state of apparent convalescence, the pains in the hip and loins having returned with great severity, the Stramonium was resumed in doses of three-fourths of a grain, three times a day. The rheumatic pains almost immediately abated, and on the 5th of July, he only complained of pains in his elbow joint, and shin bones; for which the blue pill was ordered, and the Stramonium was at the same time continued till the 22d of July. At this period he complained only of weakness in his limbs, and the Stramonium was discontinued. He was discharged cured on the 11th of September.

CASE 7. Justin Macarthy, æt. 56, was admitted on the 10th of July, having been ill about three weeks. He complained of excruciating pain in his right hip, thigh and knee, which I had



first mistaken for sciatica, but afterwards appeared upon examination to depend upon a disease of the hip-joint and thigh-bone. In this case Stramonium, though gradually increased to one grain, three times a day, afforded no relief to the patient, though it produced distinct giddiness and some rambling during his sleep. This man however, I cannot omit to observe, was most remarkably relieved by blistering the hip and the knee in succession, and he now complains, almost solely, of pain in the inguinal region\*.

CASE 8. Christopher Russel, a poor man, aged 60, admitted on the 10th of July, had laboured about a fortnight under acute sciatica, and had been blistered on the head of the femur without any benefit. After using a variety of medicines without effect, he was ordered, on the 14th of May, to take half a grain of extract of Stramonium three times a day, and to suspend all other medicines. The relief was immediate. He continued the Stramonium till the 25th of the same month, when it was omitted, the man being nearly well, and he was soon afterwards discharged free from complaint. The Stramonium, in this instance, removed the pain without producing any affection of the head.

CASE 9. William Rawson, æt. 48, was admitted into the hospital on the 10th of July, for a severe sciatica of three months' standing. Various remedies having been previously tried without effect, half a grain of the extract of Stramonium prepared from the seeds, was ordered three times a day. The relief produced was very remarkable. In a few days he was able to walk out, and was soon afterwards well enough to be discharged. The Stramonium in this case occasioned only slight dizziness.

CASE 10. Lawrence Murry, æt. 34, was admitted a few weeks ago, labouring under excruciating pains, partly rheu-

\* A tumour has since appeared in the groin, from which matter has been discharged.

matic, partly syphilitic, with extremely severe nocturnal exacerbations. He had kept his bed constantly ever since his admission. He had taken a great variety of the usual anti-rheumatic and anti-syphilitic medicines, and had been slightly salivated twice, without permanent relief. Opium in pretty large doses was of but very little avail. At last he was ordered, one night at bed-time, to take one grain of the extract of Stramonium prepared from the seeds; but this dose produced so much dizziness and nausea, that although it sensibly mitigated the pain, it was thought necessary to omit it. A few days after this, however, the pains raging with increased violence, the Stramonium was again resumed, in the dose of half a grain, three times a day, with the very best effect. The giddiness induced by this dose was hardly perceptible, and he felt a greater relief at the end of two days, than he had ever experienced since his complaint began; he has since continued the extract for about a fortnight, together with mercury, and is now in a convalescent state.

CASE 11. A young woman was admitted a few months ago into the hospital by Mr. Astley Cooper, for a cancer in the left breast. Being repeatedly struck, on passing her bed-side, with her tears and her expressions of agony and despair, I inquired into the particulars of her situation, and found that she was advised to quit the house immediately, her general health suffering materially from confinement, and the circumstances of her case not admitting of ultimate recovery. The surface of the breast had ulcerated, and had become exceedingly painful. The right breast had also become diseased, and opium, Belladonna, and various other palliatives had been administered at different periods with very little advantage. I advised her to stay a few days longer in the hospital in order to try the Stramonium, small doses of which were immediately ordered. The result was that she soon found her pains very materially relieved by that remedy; and when I saw her again, a few days afterwards, she was comparatively serene and comfortable. Under these circumstances she left the hospital to go



to the country. But I have just heard that she has lately fallen a victim to her disorder.

CASE 12. The following case, in which Stramonium was used in *Tic douloureux* with evident benefit, being that of a lady, whose husband is a medical man of considerable experience and observation; and the outline of the case having been drawn up at my request by that gentleman himself, I shall lay it before the society in his own words.

"The complaint in Mrs. S.'s face \* began in the first week in Lent, and continued about eight weeks, when it appeared to have yielded to occasional doses of opium, and a mixture of valerian, camphor and ether. During this period a plaster of cicuta and opium was applied to the face, and before it was removed produced active vesication. The relief however from this, if any, was but temporary. Mrs. S. now went into Hertfordshire, and the complaint returned in about a fortnight, which was probably induced by riding frequently in an open chaise in the high grounds of this country. The same remedies now having been again employed, afforded no relief, when recourse was had to the Stramonium, in doses of a quarter of a grain of the extract from the seeds, which afforded almost immediate cessation of pain, and was afterwards frequently resorted to for this purpose, and on no occasion was it necessary to repeat it more than a second time after an interval of two hours. The Stramonium never produced any inconvenience, and never failed of relief; so much was this depended on, that Mrs. S. never went without some of the pills in her pocket. It was now thought that the complaint in the face might be connected with spasms in the stomach, to which Mrs. S. had been for some years subject, and which were connected with a costive state of the bowels. With this view she was advised to adopt a mild mercurial regimen (the blue pill), and appeared to derive considerable benefit from its continuance. At pre-

\* This lady was seen by several medical men, and amongst others by Mr. Astley Cooper, who did not hesitate in considering her as labouring under *Tic douloureux*.



sent she has discontinued the mercurial plan for about two months, and had been free from the complaint some time before. It may be necessary to mention that, during the first attack, the bark was taken in large quantity. The arsenical solution was also used, till it disagreed so much as to oblige us to leave it off. Thus, although the mercurial plan appears to have produced the most permanent advantage, yet it must be confessed that the effect of the Stramonium was extremely beneficial in affording immediate relief when the pains were excruciating."

CASE 13. Encouraged by the effect of Stramonium in the case I have just related, Mr. Astley Cooper was induced to recommend to my care Miss D. (who had laboured for some years under a severe and aggravated form of the same disease), with a view to enable me to give that medicine another trial in this obstinate disorder. In this instance however, it failed entirely of producing relief; or rather the patient, a person of the most highly irritable nervous habit, could not bear its effects even in the minute dose of one eighth of a grain. It produced great affection of the head and of the stomach, and such a general nervous agitation as could not be endured; and the medicine was abandoned without having produced the least benefit.

CASE 14. Another, and more promising opportunity of trying the effects of Stramonium in *Tic douloureux*, was afforded me a few weeks ago, by the recommendation of Mr. Cooper. The subject of this case is a gentleman whose general health appears perfectly good, though he has been frequently tormented, for about three years past, by severe paroxysms of *Tic douloureux*. Between the two or three first attacks, intervals of several months intervened; but for the last 15 or 16 months the complaint had continued without any complete intermission, though varying considerably at different times, as to its violence and character. Having been himself a medical man, and acquired great eminence and celebrity in a particular branch of the healing art, this gentleman had been extremely

active in trying all the remedies that have been recommended in this disorder; but had failed in obtaining permanent relief. Early in August last, he began to take the extract of Stramonium prepared from the seeds, in the dose, first of a quarter of a grain, and soon afterwards of half a grain three times a day; and his first report was, that in the smaller dose it had produced no relief, but that the benefit obtained from the larger had been very considerable. The remedy had been attended with no sensible inconvenience, and had produced rather an aperient effect. At this period however the patient went to the continent, and I was no longer favoured with direct accounts of his proceedings. But as he has lately written to a friend that his face is very much better, and that he continues the Stramonium regularly, it is reasonable to hope that his case will afford another instance of the beneficial effects of this remedy.\*

Thus from the facts I have just laid before the society, (the only ones that have yet come under my own observation respecting the effects of Stramonium,) it would appear that in four cases of sciatica decided benefit was obtained. The efficacy of this remedy was still more strongly marked in two cases of sciatica combined with syphilitic pains. It failed entirely in two instances of diseased hip-joint. It produced considerable relief, as to pain, in a case of supposed disease of the spine followed by paraplegia; and likewise in one of cancer of the breast. It allayed materially the pain occasioned by an acute uterine disease. It was of great and repeated utility in a case of *Tic douloureux*; its utility in a second case of the same description was very doubtful; and in a third, it entirely failed.

\* Since this was written, another letter of a more recent date (September, 1816) was received from that gentleman, which considerably diminishes my hopes of the ultimate success of Stramonium in this case. He says, "My face is still indifferent, though upon the whole rather better than when I left England. I have continued the Stramonium, and now take between five and six grains every day, but without any perceptible effect." It appears from the same letter that the preparation of opium called 'the blackdrop' generally produces relief.



It may perhaps appear to this learned society, on a first view of the subject, that the addition of a narcotic plant can hardly be considered as a new or important acquisition in practice, since we are already possessed of a variety of powerful and efficacious medicines of the same class. But if this remedy should decidedly prove, upon further trial, to produce the effects I have described, and in particular to allay pain, without inducing constipation or lethargy, I cannot help flattering myself that it will be found to afford, at least, a valuable palliative.

*Postscript.* After the two first sheets of this paper were printed off, I heard that the name of the medical gentleman alluded to in page 456, was Mr. Norwood, of Ashford, in Kent.

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*Additional Particulars on the Preparation of the Extract of Stramonium, by DR. MARCET.*

[From the Medico-Chirurgical Transactions, Vol. VIII.]

HAVING, since the publication of my communication on the Extract of Stramonium, taken every opportunity of multiplying my trials of the effects of that remedy, and having received very favorable reports of its efficacy from various practitioners in different parts of the country, I think it incumbent upon me to communicate to the public an important fact which these trials have brought to light, respecting the mode of preparing this medicine.

Having had occasion, at Guy's Hospital, in the course of last summer, to renew our supply of this extract, two patients who were much accustomed to take it, the one for a *tic douloureux*, and the other for a very painful uterine disease, both complained that the remedy was much less effectual than it had been on former occasions, in producing the usual relief; and that, in order to obtain the desired effect, it was necessary to



take as much as two or three times the quantity they had been accustomed to use. Having mentioned this to Mr. Hudson, who had prepared the first specimens, this gentleman told me that he had already received, from other quarters, information to the same effect, and he soon favoured me with the following explanation:

*Letter of Mr. Hudson to Dr. Marcet.*

27, Haymarket, 27th October, 1817.

SIR,

During the last summer some remarks were made to me on the uncertainty, or want of uniformity, experienced in the effects of the extract of *Stramonium* prepared from the seeds; and I was also informed, that there was a considerable variation in the appearance of the extract prepared by different persons. I therefore examined two specimens which had appeared, upon trial, to differ materially in strength. No. 1. was bright, black, and tenacious; No. 2. was dull, brownish, and crumbly. When dissolved, No. 1. was found to consist of extractive matter, with very little deposit; No. 2. produced a very large deposit, of a farinaceous appearance: this matter abounds in the decoction of the seeds, and occasions considerable trouble to separate it. I have sometimes been obliged to stop the evaporation when considerably advanced, and subject the decoction to a second deposition, and have two or three times been obliged to re-dissolve the extract. This method is tedious, and renders the product small, and expensive; but it is quite clear to me, both from the testimony of practitioners and my own observation, that it is of great importance to use this precaution in the preparation, in order to make the extract resemble the specimen, No. 1. which was found to be very superior to No. 2.; in some instances as 3 to 1. I have no doubt the extract will be found uncertain, in proportion to the quantity of farina it contains.

There is, however, another circumstance which has had a share in producing the uncertainty. The seeds of *Stramonium* had not been an article of any value till the effects of the ex-

tract became known, through your paper;—the demand then became so great, that all the seed that could be found, new or old, in good or bad condition, was brought into the market, and speedily bought up. This inconvenience, I believe, no longer exists; the growers of medical herbs have this year raised large quantities of the *Stramonium* plant, and there is a good supply of fresh seeds. I hope, therefore, we may anticipate more uniform and favourable results in the future exhibition of the medicine.

I am, Sir,

Yours, very respectfully,

W. B. HUDSON.

To the above very distinct and satisfactory statement of Mr. Hudson, the following particulars (which I obtained from a person whose accuracy and competence in pharmaceutical manipulations may be depended upon) may be added, as tending to confirm and farther explain Mr. Hudson's observations.

1. The decoction of the seeds of *Stramonium*, when newly made, is turbid and milky, and continues so even after long standing.

2. This decoction, if immediately filtered through paper, cannot be obtained quite transparent, though it becomes much less opaque.

3. The filtered decoction, on standing in contact with the air, for three or four days, deposits very little; and, in close vessels, it deposits still less.

4. The last-mentioned decoction, by rapid but cautious inspissation, yields an extract, which is very tenacious, and which, on being again mixed with water and gently warmed, forms a solution nearly as transparent as the decoction from which it was prepared.

5. The extract, on the contrary, made from the unfiltered decoction, is not tenacious; but is oily and friable, and if mixed with water, yields a considerable quantity of insoluble sediment.



It appears, therefore, that in order to prepare the strongest extract, two modes of operating present themselves: the one consists in filtering the decoction made from the seeds and obtaining the extract from this filtered solution; and the other, in re-dissolving the extract obtained without any previous filtration, and again evaporating the solution after the farinaceous matter has spontaneously subsided from it. Both preparations are probably correct; but further experience will be necessary to decide which is the most convenient or economical.

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To JAMES MOORE, Esq. *Director of the National Vaccine Establishment.*

[From the London Medical and Physical Journal, for January, 1818.]

SIR,

I HAVE read your History of the Cow-pox with great satisfaction. It contains clear views of the subject, and, I doubt not, will do much good in settling the opinions of professional and non-professional men respecting Vaccination. There are, however, a few points on which I am inclined to think you have not dwelt strongly enough; while there are others to which I cannot yield my entire assent.

On these points of discrepancy I shall take the liberty of stating my sentiments without any reserve; confident that, as the whole tenor of your work proves your chief object to have been to promote the cause of truth and the success of vaccination, you will receive with candour the remarks of one who professes to be animated by motives equally honourable. As I am somewhat stinted for time, you will be pleased to overlook any want of arrangement observable in my remarks.

1st. The early period of life at which you recommend vaccination to be performed—three weeks old, has always appeared to me too soon. Independent of what you have so properly said of incompleteness of organization, infants, for a longer period than this after birth, are peculiarly liable to



cutaneous affections, which may in some instances interfere with, or actually supersede, the vaccine irritation.

I am aware of its having been said that the presence of eruptions should be no impediment; on the contrary, some have even alleged that such eruptions may be benefited by the introduction of the vaccine disease into the constitution. But this, I should think, must be considered doubtful, if not dangerous doctrine.

If the views of John Hunter with respect to the action of morbid poisons be correct, (and, in my humble judgment, they are the only views that present us with any thing like an approach to scientific precision in pathology,) then the irritation produced by the eruption already existing may so far counteract that of the vaccine virus introduced, as greatly to embarrass our judgment of the result. Even the irritation of teething, when present in a high degree, may be quite sufficient to prevent so mild a disease as the vaccine from exerting its peculiar energy; and, in fact, I have very little doubt that many of the failures have arisen from these very causes.

I respectfully suggest, therefore, that moments should be chosen for introducing the preventive when the system appears to be free from all irritation, either local or constitutional. Such moments may, under ordinary circumstances, be found. The occasion is not now so pressing as when the small-pox was stalking abroad; we can better choose our time. When the latter disease is in the neighbourhood, every consideration, as you judiciously remark, must give way.

2d. I am sorry that I feel myself compelled to dissent from the doctrine, so zealously, but (as I conceive it) so erroneously, inculcated by you, of permitting vaccination to be practised by unprofessional persons. I find the same thing countenanced by Dr. Dewar, in his "Account of an Epidemic Small-pox which occurred in Coupar, in Fife." I can perceive no satisfactory reason for this: indeed, every consideration appears to me unfavourable to it.

Unfortunately for the cause of vaccination, so insignificant was the disease held to be on its first introduction, that the most ignorant were deemed competent to superintend all its

details; and the very peculiarity in its history which required and ought to have engaged the closest attention, became a reason for indifference, or justified neglect. The evils which have sprung from this source may be more easily imagined than stated.

Were the disease to render itself manifest by any outward visible signs beside those of the vesicle, or could an indication of constitutional security be accurately deduced from any thing in the state of the internal organs obvious to common observation,—then the practice of vaccination might be safely entrusted to any person of common sagacity. But, when the constitutional symptoms are of the most evanescent description; when the progress of the local affection is such as to demand the most painful attention, even of professional men, to determine accurately its genuine or spurious character; when, even at public institutions for vaccination, the difficulty of enforcing the requisite care is universally felt,—I own it does a little surprise me, to find so important an office consigned to the hands of those who are so utterly unfit to perform it well. At the very time when so much stress is laid, and justly too, on the necessity of narrowly inspecting the form and progress of the vesicle,—when many of the instances of small-pox after vaccination are presumed to have arisen, either from imperfect knowledge of the true character of the vesicle, or of the cicatrix which it forms,—it were to have been wished that an injunction to commit inoculation to nurses, midwives, and other unprofessional persons, had proceeded from authority less respectable.

It is scarcely possible to avoid tracing much of the mischief which has already occurred, at least in the northern part of the kingdom (where mothers have vaccinated their children with the point of a needle, making only one puncture), in great measure to this source alone. The statement of Dr. Dewar is strongly corroborative of this opinion, whatever ingenuity and ability he may have shewn in urging the opposite doctrine: he says “it is probable a small proportion of the inoculations in Coupar were performed by medical men.” If this has been the case to any extent in the other provincial



towns of Scotland, there may yet be a great proportion of the Vaccinated in that country in whom the liability to small-pox still exists. But, disclaiming all appearance of cavilling, and conceding to Dr. Dewar every thing he can desire, he and every one must admit, that such inoculations lay the matter open to all kinds of doubt and perplexity, and that there is no dependence whatever to be placed on them in our reasonings.

People of this description are totally ignorant of those morbid phenomena in different constitutions, which may modify the action of the vaccine virus, or the appearance of the cicatrix, and regulate the opinion of the patient's security. Besides, it is among the inferior classes that small-pox is most apt to spread; and, consequently, the necessity of regular vaccination is here as great, and even greater, than among the higher ranks. The latter also can flee from the danger, if at any time they dare not encounter it; the former are chained to the spot.

I would even exclude the clergy from this duty. It is true a Treatise on the Cow-pox was published some years ago in Edinburgh,\* dedicated to the Scottish clergy, and containing a strong recommendation to them to practise vaccination. The zeal of this gentleman was eminently honourable to himself, and to his profession; but I apprehend it was a misplaced zeal, nor does it appear to me to admit of a doubt, that cases innumerable of spurious or imperfect vaccination must have been the consequence of that proceeding. However competent to the discharge of their peculiar duties we must admit the clergy throughout the kingdom to be, it is no disparagement to them to say, that their habits and pursuits are altogether foreign to such an employment as vaccination; nor can they be expected to devote to it the necessary time and attention, even were the parents of the vaccinated to be more careful and punctual than they are generally found to be. Indeed, every interference of the kind is, in my judgment, to be seriously deprecated, and ought to be peremptorily prohibited, except in those remote situations where medical assistance is not to be had; then

\* By George Bell, surgeon, Edinburgh.



the clergy every-where are the best, and indeed the only, resource.

Moreover, Sir, have you not yourself declared to us that "no surgeon, however hurried with business, ought to forget, that an oversight, apparently trivial, may possibly cost his patient his sight or life?" and again, that "the observance of the instructions laid down (by you) are of more real utility than any other point of practice?" Now, Sir, I put it to your consistency, whether it be safe or judicious, where such interests as these are at stake, to confide their management to the individuals you have pointed out?

It will result, then, that the practice of vaccination must be taken out of the hands of unprofessional persons. There is no other way left but this of establishing the Vaccine\* on that immoveable basis on which it ought to stand. Your suggestion that the operation should be performed by all the members of the medical profession is most laudable, and ought forthwith to be adopted.

While my conviction of its paramount utility urges me thus strongly to insist on confining the practice of vaccination to our profession, I feel it would be to insult that profession were I here gravely to set about disavowing, on its behalf, all self-interested motives. Such a vindication would be spurned, as it ought to be, with contempt. Yet I cannot help observing, that, from the very first promulgation of the vaccine, a great deal of unmerited obloquy has, by the public, been cast upon that department of the profession to which I more immediately belong; and you must pardon me, Sir, for thinking that, however creditable it is to your candour, you have in your late work, with reference to this point, dealt roundly enough with your brethren. It will, I suspect, be difficult to find in history a more pleasing instance of philanthropy and disinterested conduct, than that exhibited throughout the whole course of vaccination by our profession at large, and, I may venture to add,

\* By-the-bye, this word used substantively sounds rather oddly in my ear. Where is the objection to *vacciola*, seeing that we already have *variola*? But, as the term *vaccine* is probably by this time naturalised in the South, its adoption or rejection is a matter of very little consequence.

by the surgical part of it in particular. I dare safely avouch on their part, that a thought of self-interest, in the sense which has been insinuated, was never for a moment suffered to harbour in their minds as a motive to influence their conduct. There are undoubtedly worthless individuals in every profession, but in the present instance I trust there are few exceptions indeed to be made; and, at all events, common charity would incline us to place the opposition which vaccination has at different times encountered from medical men to the account of misconception, ambition, rivalry, or to any other motive rather than the love of lucre, in the atrocious acceptance in which it is here understood.

3d. I observe, you very properly speak with caution of legislative interference. It certainly ought to be the last resort; yet I do not see those very formidable difficulties which have been started by many. When the vaccine was new to the world, the utmost indulgence to fears or to feelings, was necessary and even proper, for the sake of vaccination itself. But the matter now appears in a very different light. What may have been expedient and right fifteen or twenty years ago, may now be inapplicable. The great mass of the thinking part of the community, have no doubts on the subject. It is among the very lowest classes of society that the difficulties chiefly occur, and these difficulties, in most cases, do not proceed so much from ignorance or natural prejudices, as from sheer indifference and neglect.

The danger has now, in a great measure, ceased to menace, and they are consequently careless of precautions against that which is not every day staring them in the face. I never experienced any difficulty in persuading even the most obdurate of this class to have their children vaccinated when small-pox was at the door—a pretty convincing proof that their resistance had had some other foundation than conscience or feeling.

The same principle of continued non-interference carried a little farther, would go to abrogate the laws of quarantine. It is not easy, therefore, to understand why the peace and safety of the rational part of the people, who almost universally ap-



prove of vaccination, should be endangered, in tenderness to the prejudices, or rather the obstinacy, of the ignorant or the bigotted; on whom neither reasoning nor experience can be expected to produce conviction.

We hear of few alarms, few ravages of small-pox in foreign countries, and, assuredly, of no small-pox after vaccination; and, I know of no better way of accounting for this, than that in all other countries, the introduction of vaccination was made an affair of state concern. Persons capable of appreciating and communicating its benefits, were appointed to conduct its details, and conviction of its efficacy was the invariable and immediate consequence.

It may, however, remain a question, whether the advantage may not ultimately rest with us. The probability is, that, when vaccination shall have triumphed, as it must, over all obstacles, and been established on the basis of public opinion, consolidated by long and mature discussion, it will for ever remain impregnable to attack. Though, in reply to this, it might be plausibly urged, that, were all countries rigorously to enforce vaccination, the small-pox must be speedily exterminated, and the tedious conflict of opinions and controversy consequently superseded.

4th. Another circumstance is, the period at which lymph for inoculation is directed to be taken. It is true, that, under the regulations you have laid down of procuring three or four vesicles, lymph may be taken at any period from its first formation to the acme of the disorder; but, perhaps, the common practice of waiting till the eighth day may still be adhered to with advantage. The necessity of making so many punctures offers to our notice a new view of the subject. If this be the case, what is to become of all those in whom one vesicle was thought sufficient, and they form a very great proportion of the vaccinated now existing. But, waving this matter, I suspect there can be no question, that irregular vaccination must have very often occurred from the practice publicly enjoined in Scotland,\* of taking lymph so early as the fifth, sixth, or seventh day, even in those cases where only one puncture was

\* Vide Treatise by Mr. George Bell.



made. I apprehend, Sir, that in every contagious disease, there must be a point in its progress at which the contagious principle, or matter, or whatever you choose to call it, is present in greater intensity than at any other. What this point is, we have no means of determining precisely. Reasoning would intimate, that the power of propagating itself must be most energetic about, or near, the moment before the disease commences its decline; and, in the disease of which I am now speaking, this would seem to be when the vesicle has assumed those peculiar appearances universally admitted to be characteristic of the disease. The formation of the areola, I presume, constitutes this period, and the eighth day is, in general, the day on which it takes place. The virus, I should suppose, ought then to be regarded as possessing its highest degree of power. I may, at least, notice what appears to be conformable to this idea; that, shortly after the introduction of vaccination, when lymph was never taken sooner than the eighth day, and only one puncture made, practitioners had the satisfaction of communicating the disorder with more certainty than they have been able to do of late. But, even admitting that the lymph does possess its highest degree of power from the moment when it first begins to appear in the cells of the vesicle, it is clear, even upon your own principles, that, whatever additional power this may give of imparting the disease to another, the chances of the vaccine exercising its protecting influence on the constitution of the individual where the lymph had been taken, would be proportionally diminished, especially where only one vesicle was formed, which, for a long time, was the prevailing practice. It is impossible, therefore, to look back upon the practice at that time followed, without great fear that many failures have happened from this cause, and, still greater astonishment, that so very few have as yet shown themselves. And, really, when one reflects on the multifarious and complicated obstacles, against which vaccination has had to contend from the beginning, the wonder is not that we observe numerous cases of failure every-where starting up to alarm and perplex us, but that this extraordinary preventive has been able to maintain any thing like a respectable footing

amongst us; nor can a more conclusive proof be afforded of the extent of its efficacy in destroying the susceptibility to small-pox.

All these things being duly weighed, it is matter of deep regret, when we find writers like Dr. Dewar, and the Editors of one of the London Medical Journals, express themselves doubtfully on the subject of vaccination.

I feel respect for the candour of the authors who entertain those doubts of the full efficacy of vaccination, because they are honestly and conscientiously entertained; but, in the numerous sources of failure originating in the circumstances I have pointed out, and in others that might be enumerated, ought not these respectable writers to see reason to pause before they contribute, by the influence of their authority, to shake, even in the smallest degree, the confidence of the public in this most beneficent dispensation? For what does all that they have yet witnessed amount to?—Nothing—absolutely nothing. They have allowed a few anomalous ill-authenticated cases to cast a momentary shade of doubt over their minds, and have totally lost sight of the principal link in the chain of evidence, or rather that which must be considered the grand result of all, namely, the almost complete disappearance of the small-pox.—What has charmed away this loathsome and fatal distemper?

Shall we then place one instance, in which small-pox has succeeded to vaccination, in opposition to the five hundred instances in this country, or, probably, to the five hundred thousand throughout the world, which have, for nearly twenty years, resisted that disease? This would be to adopt for our guidance the exception, and to reject the general rule.—No,—I trust we shall not so much as meditate for a moment on tamely yielding up the fortress to the enemy, on the first appearance of an insidious flag of truce; but, like brave and resolute soldiers, hold out till time and experience shall demonstrate the necessity of a surrender. If we so defend ourselves, I have few fears that we shall ever be called upon to give up the keys of the citadel.

CHIRURGUS.

*Newcastle-upon-Tyne, November 7, 1817.*



*On the Milk extracted from the Cow Tree (l'Arbre de la Vache), and on Vegetable Milk in general.*—By HUMBOLDT, *Annales de Chimie*.

[From the London Medical Repository, for May 1818.]

"WE have given (say the editors of the *Annales*) the extract of a memoir read by M. Humboldt in one of the last sittings of the Academy of Sciences. The readers who may desire a more extended detail on a subject so interesting in vegetable chemistry, will find it in the sixth volume of the *Relation Historique*, by the author, which will be very shortly published.

"We had for several weeks past heard mention made of a certain tree in the valleys of Aragua, the juice of which was said to be a nourishing milk; the tree, indeed, was called the cow tree, and we learnt that the negroes of the place, who drank it abundantly, looked upon it as a very wholesome species of aliment. This account excited surprise in our minds, since the general characters attached to the milky juices of plants, are those of being acrid, bitter, and more or less poisonous. But since our residence in Barbula (province of the Caraccas,) we have found that in this account of the *Palo de vaca* there was no exaggeration. The tree thus named, is one of a very beautiful appearance. Its flowers we had not an opportunity of seeing; the fruit of it is rather pulpy, and encloses sometimes one and sometimes two kernels. When incisions are made into the trunk of this tree, which appears to belong to the sapota tribe of plants, it gives out an abundance of a glutinous thick kind of milk, void of all acrimony, and exhaling an odour by no means unpleasant. We drank considerable quantities of it, both in the evening before we retired to rest and early in the morning, without experiencing the slightest inconvenience: it is only the glutinous nature of the fluid in question that occasions its taste to be at all unpleasant. Both the slaves and others employed upon the plantations drink it freely, and mix it with the maize and capada plant.



The master of the plantation assured us that the slaves always thrived and gained flesh during the season in which the *Palo de vaca* furnished them with milk. When this milk is exposed to the air, its surface becomes covered with a strongly animalized substance of a yellowish hue, and fibrous stringy appearance, resembling a cheesy matter. This change in the juice is probably produced by an absorption of oxygen from the air. When the membranous substance of which we speak is separated from the more fluid part of the milk, it proves to be nearly as elastic as caoutchouc; but it undergoes in the course of time a like putrefaction with gelatine. The people of the place call this matter, cheese. It becomes sour in about five or six days, according to the observation which I made on some portions of it which I took with me to Orenoque. The milk, enclosed in a well stopped vial, had thrown down a small quantity of *coagulum*, which, far from being fetid, constantly exhaled a sort of balsamic odour. The fresh milk scarcely coagulated at all upon being mixed with cold water; but a separation of this viscous matter took place when I heated it with nitric acid. We sent two bottles of this milk to M. Fourcroy, at Paris. The one bottle contained the juice pure, in the other it was mixed with a quantity of carbonate of soda.

This remarkable production, the *Palo de vaca*, appears to be confined to the Cordilleras (la Cordillère du Littoral,) especially near the lake of Marakabo. It is found also near the town of San Mateo; and, according to M. Bredmeyer (whose voyages have so much contributed to enrich the beautiful green-houses of Schönbrun and Vienna,) it is to be seen in the vale of Caucagua, three days' journey east of the Caraccas. This naturalist, like ourselves, found the vegetable juice in question of an agreeable taste and aromatic odour. The natives of Caucagua call the tree which furnishes it, the milk tree *arbol de loche*.

The inhabitants of the Andes had been in the practice of fabricating wax lights from the wax which is found on the trunk of the palm tree, long before the chemists of Europe had discovered quantities of wax in the pollen of flowers, varnish in leaves, and farina in fruits; in like manner the *caseum*, the

basis of cheese, has but recently been detected in the emulsions of almonds; whereas we find that ages ago, in the mountains of Venezuela, the milk of a tree, and the cheese which separates itself from such milk, were used as aliment. How are we to account for these singularities in regard to the development of our knowledge of nature's productions? How can we explain the fact, that the people of another hemisphere have discovered and applied properties, which had for so long a time escaped the penetration of men, whose very occupation it is to search Nature's laws, and penetrate her mysterious operations?

It would appear that the fact is to be explained, partly from the circumstance of the elements and principles of plants being distributed among so many orders and families of the vegetable creation, partly from that difference of quantity, with respect to their essential principles, which is observed in the vegetable world, according as the particular plant is a native of equatorial, or of cold and temperate latitudes, and partly by an ingenuity derived from necessity, which impels uncultivated man to seek for his sustenance in the natural productions by which he is surrounded. Thus the juices, the bark, the roots, and the fruits of trees, become the subjects naturally of instinctive investigation; and when poisonous productions are combined with those that are wholesome and nutritive, man is taught by the same necessity to separate the one principle from the other, as in the arum, tacca, &c. The American savage, as well as the inhabitants of the South Sea islands, have thus learnt the art to prepare the *fecula* of plants, by compressing it and separating its juice. In the milk of plants, as also in the milky emulsions, materials considerably nutrient, such as albumen, the caseous and the saccharine principles are intermixed with caoutchouc, and deleterious ingredients, such as morphine and hydrocyanic acid. These combinations vary not only in the different tribes of plants, but also in the respective species of the same genera. Sometimes it is the morphine or narcotic principle, which predominates in vegetable milk; in other instances the caoutchouc is the characterizing ingredient; and



lastly, as we have seen in the juice of the papaya, and cow tree, the caseous is the main principle.

The lactiferous plants belong principally to the three families of the Euphorbia, the Urticaria, and the Apocyna; and, as upon investigating the different distribution of vegetable growth in the several parts of the world, we find that the species of these orders of plants are most numerous in the tropical regions, we infer that a very high temperature is necessary for the proper elaboration of the milky juices, as well as to the complete formation of the caoutchouc, of albumen, and of the caseous principle. The juice of the *Palo de vaca* certainly presents one of the most striking examples of a vegetable milk in which the acrid and deleterious principles are not united to albumen, caseum, or caoutchouc; but the euphorbium and asclepias genera, so generally known by their caustic properties, had before furnished us with some species of which the juice is bland and innocent; as in the instance of the tabayba dulce, (*euphorbia balsamifera*) of the Canary Isles, and the asclepias lactifera of Ceylon. Bruman has told us, that the inhabitants of Ceylon make use of this last in lieu of milk, and that they mix its leaves in cookery with those articles of food that are generally prepared with milk. It is to be wished that Mr. John Davy may pay attention to this particular during his stay at Ceylon; for it appears probable, as has been suggested by M. Decandolle, that it is only the juice which exudes from the young plant, which is used for the purposes in question, viz. that which flows from the vegetable before the development of the acrid principle. Indeed, in some countries, the first shoots of even the apocyna are eaten.

I have thus endeavoured to institute a general resemblance between the juices which circulate in plants, and the lactiferous emulsions which are yielded by the almond and palm tribe; and I may here add a few remarks respecting some experiments upon the carica papaya, which I made during my stay in the valleys of Aragua; not, of course, of so satisfactory a nature as they might have been, had I been furnished with the several reactives necessary to conduct investigations of this kind. I ascertained, that the younger the fruit of the plant,



the greater was the quantity of milk which it furnished: this juice, indeed, was found even in the germ of the fruit; and as it proceeded to maturity, its milk became not merely less abundant, but also more aqueous. In it was found less of the animal coagulable matter (*matière animale coagulable*,) and it is conceivable, that as the plant advances in growth, this matter, abstracted from the fruit, comes to constitute its pulpy or fleshy parts. The coagulum from the very young fruit, heated with nitric acid, becomes viscous, and exhales a waxy odour, similar to that which I have observed in muscular flesh and in small mushrooms (*morilles*,) when the acid is added to them in the same manner. Following the hints of Fourcroy and Vauquelin, I mixed the milk of the papaya with a solution of carbonate of soda. The mixture did not run into coagulated lumps, even when water was added to it. The membranous substance did not show itself, until, by the addition of an acid to the solution, the soda became neutralized. The coagulum formed by the nitric acid, lemon juice, and hot water, I caused to disappear, by adding to the mixture the carbonate of soda. By this addition the juice resumed its milky and liquid appearance; but the experiments only answered when the addition was made to recently formed coagula.

In conclusion, it may be remarked, that a comparison of the milky juices of the papaya with those of the cow-tree and the hevea, offers a striking analogy between the juices which abound in the caseous, and those that contain the caoutchouc principle. All the productions in which the latter is predominant, as likewise the impenetrable garments (*manteaux imperméables*) that are fabricated in Spanish America, are made to exhale a like animal and disagreeable odour, by placing the milk of the hevea between two layers of them; a circumstance which would seem to argue, that the caoutchouc, in coagulating, attracts to itself the caseum, which is no other, perhaps, than albumen in a different form. The fruit of the bread-tree is not any more bread than are the bananas before their maturity, or the tuberos and amilaceous roots of the cassada, the convolvulus battatas, or the potatoe. On the contrary, the milk of the *Palo de vaca* contains the caseous principle in the

same manner as does the milk from the mammalia. In pursuing these analogies between the animal and vegetable world, we may, with M. Gay-Lussac, consider the caoutchouc as the oily part, the butter as it were of the vegetable milk. In a word, we may find in vegetable milk, caseum and caoutchouc; in animal milk, caseum and butter. The two principles vary in their proportions in different animals, as they do in the various species of lactiferous plants. In these last, they are more generally mingled with other materials which are not alimentary; but from such materials they may, perhaps, be always separated by chemical processes. Vegetable milk becomes wholesome and nourishing when it is deprived of its acrid and narcotic principle, and when it abounds more in cascous matter than in caoutchouc.

## SELECTED REVIEWS.

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*American Medical Botany, being a collection of the native medicinal plants of the United States, containing their Botanical History and Chemical Analysis, and Properties and uses in Medicine, Diet and the Arts. With coloured engravings.* By JACOB BIGELOW, M. D. Rumford professor and lecturer on materia medica and botany in Harvard university. Vol. I. part I.

[From the New England Journal of Medicine and Surgery, for Jan. 1818.]

THE views embraced in the plan of this elegant work are particularly detailed in the preface to the first volume. The author announces his intention to offer the public a series of coloured engravings of such native plants as deserve the notice of medical practitioners, on account of their active properties. This design further embraces such vegetable species, as are particularly useful in the arts, and in diet; also poisonous plants which must be known, that they may be avoided. Of these various and interesting objects of inquiry, the botanical history is first given, then the result of the author's chemical analysis of their constituent parts, and lastly, their medicinal history.

A work of this character cannot fail to excite the attention of those who are at all interested in the progress of science in America. Works of this kind are among the means of national distinction, and in this view they have a strong and decided claim, not only on those who cultivate science, but also on those who are desirous that the country shall find its respectability in its own resources.

A further source of interest is found in the variety of information which such a publication is calculated to contain. To



the exclusive botanist, it furnishes correct delineations, and minute botanical histories. It is calculated to advance vegetable chemistry; while it brings to view the true character of plants considered medicinal, and furnishes to physicians the best means of distinguishing and identifying them.

In opening the American Medical Botany, the attention is first attracted by the beautiful engravings it contains. These are not merely coloured drawings, shaded by the lines of the graver, but costly and finished paintings of the objects which the work describes. The author seems to have aimed at giving true representations of plants as they are, such a view of them as they naturally offer, while under examination, rather than a display which the imagination might have assisted him in making. In the letter-press, we have next an account of the localities of the plants described, with some notice of their habits, and a full botanical description of each. We have then a description of their properties, their chemical constituents, their application and use in disease, collected from the author's own trials, and the testimony of respectable medical practitioners and writers.

The first half of vol. I., which is published, contains the following articles:—

<i>Datura Stramonium,</i>	Thorn Apple.
<i>Eupatorium perfoliatum,</i>	Thorough wort.
<i>Phytolacca decandra,</i>	Poke.
<i>Arum triphyllum,</i>	Dragon root.
<i>Coptis trifolia,</i>	Gold thread.
<i>Arbutus uva ursi,</i>	Bearberry.
<i>Sanguinaria Canadensis,</i>	Blood root.
<i>Geranium maculatum,</i>	Cranesbill.
<i>Triosteum perfoliatum,</i>	Fever root.
<i>Rhus vernix,</i>	Poison sumach.

We insert one of these articles, as a specimen of the work.

“*Datura Stramonium.*      Thorn Apple.

“The *Datura Stramonium* is a wandering annual plant, which follows the progress of cultivation, and is rarely found

remote from the vicinity of dwellings. It occurs in every part of the Atlantic coast from Maine to the Floridas, and is also found in the western states, in the neighbourhood of settlements. Its favourite haunts are the borders of fields and roadsides, among rubbish and in neglected spots of rich ground. It emigrates with great facility, and often springs up in the ballast of ships, and in earth carried from one country to another. This circumstance in Europe has undeservedly given rise to the opinion, that it is originally an American plant. Its native country, however, is doubtful, from the want of authentic descriptions of sufficient antiquity. One of the oldest satisfactory accounts of it is that of Gerarde in 1597, who has published a description and figure of this plant, and states that it was introduced into England by himself, from seeds received from Constantinople.

"Its common name in Europe, derived from the form of its fruit, is *Thorn apple*. In this country its provincial names are *Apple of Peru*, *Devil's apple*, and *Jamestown weed*. It is a plant of rank growth and luxuriant foliage, varying in height from one to six feet, according to the soil in which it grows. In Carolina it begins to flower in May, and in Massachusetts about the latter part of July, and continues until the arrival of frosts.

"The *Datura Stramonium* belongs to the first order of the fifth class in the Linnæan artificial arrangement. In its natural order it is found among the *Luridæ* of Linnæus and the *Solanææ* of Jussieu. The following are the essential marks which characterize the genus *Datura*. *The corolla funnel form and plaited. The calyx tubular, angular and deciduous. The capsule four valved.*—Under this genus are comprehended a number of species, a great part of which are natives of warm latitudes. The species *Stramonium* is distinguished from the rest by the following character. *Capsules thorny, erect, ovate; leaves ovate, angular, smooth.*—A more particular description of the plant is as follows. Stem erect, simple at bottom, much branched at top by repeated forks, smooth or slightly pubescent, hollow in the large plants, often solid in small ones. Leaves given off from the forks of the stem, five or six inches



long, acute, irregularly sinuated and toothed, with large acute teeth and round sinuses, the sides of the base extending unequally down the petiole. Flowers single, axillary, on short stalks, erect or nodding. Calyx composed of one leaf, tubular, with five angles and five teeth, deciduous by breaking off from its base. Corolla funnel shaped with a long tube, five angled, its margin waved and folded, and terminating in five acuminate teeth. Stamens growing to the tube by their filaments, with oblong erect anthers. Germ superior, hairy with the rudiments of spines, ovate; style as long as the stamens; stigma obtuse, parted at base. Capsule ovate, fleshy, covered with thorns, four valved, four celled, opening at top. Seeds numerous, reniform, black, attached to a longitudinal receptacle, which occupies the centre of each cell.

"At least two distinct varieties of *Datura Stramonium* are common in the United States. One of these has a green stalk and white flowers, and agrees with the figures of Sowerby and Woodville, except that the anthers are somewhat longer, and the dissepiment of the capsule thinner. The second variety, the one represented in our figure, has a dark reddish stem, minutely dotted with green; and purple flowers, striped with deep purple inside. It is generally a larger plant, and its stem more universally hollow. This variety is probably the *D. tatula* of Linnæus, answering to the description in the *Species plantarum*. The distinguishing marks laid down between the two plants are not sufficient to make them distinct species. I have cultivated both together and watched them throughout their growth, without being able to detect any difference except in colour. Their sensible and medical properties are the same. Sir James Edward Smith has lately informed me, that on consulting the herbarium of Linnæus, the original specimens of *D. Stramonium* and *tatula* did not appear to be more than varieties of the same plant.

"Every part of the *Stramonium*, when recent, has a strong, heavy, disagreeable odour, and a bitter, nauseous taste. Taken internally, it proves a violent narcotic poison, affecting the mind and body in the most powerful manner. Its usual consequences, when swallowed in considerable quantity, are vertigo



and confusion of mind, insensibility of the retina, occasioning dilatation of the pupil and loss of sight, tremors of the limbs and loss of the power of voluntary motion, headach, dryness of the throat, nausea and vomiting, anxiety and faintness, and sometimes furious delirium. If the amount taken be large and not speedily ejected from the stomach, the symptoms pass into convulsions or lethargic stupor, which continue till death. When not fatal, its effects, like those of other narcotics, are temporary, disappearing in from one to two days, and frequently in a shorter period.—The remedies to be resorted to in cases of poison from *Stramonium*, are a prompt emetic, followed by a free use of vegetable acids and strong coffee.

“Many stories have been related of the power of this and other species of *Datura* to produce mental alienation, without at the same time materially affecting the body. These accounts are generally of somewhat ancient date, and not correspondent with the observations of later physicians. They were suited to those days of credulity, in which the Royal Society of London gravely inquired of Sir Philberto Vernatti “Whether the Indians can so prepare the stupifying herb *Datura*, that they make it lie several days, months, or years, according as they will have it, in a man’s body; and at the end kill him without missing half an hour’s time?”

“Like opium, and like other powerful medicines, this plant, when taken in small quantity, and under suitable regulations, proves a remedy of importance, and a useful agent in the hands of physicians. In common with some other narcotics, it seems first to have been introduced freely into practice by Baron Storck of Vienna, as a remedy in mania, epilepsy, convulsions, &c. Many subsequent physicians have given testimony to its efficacy in certain forms of these disorders, yet the instances of its failure have doubtless been more frequent than those of its success. In Murray’s *Apparatus Medicaminum* may be found a summary of the reports of many medical men, who have tried it with various success in the diseases in question, as well as in others. Dr. Cullen has no doubt that it may be a remedy in certain cases of mania and epilepsy; but

doubts if any person has learned to distinguish the cases to which it is properly adapted.

"Dr. Fisher, President of the Massachusetts Medical Society, has published, in their communications, some remarks on the employment of Stramonium in epilepsy. He divides the cases of that disease into three kinds; those of which the fits return daily; those in which they recur at regular periods, as monthly, or give warning of their approach by previous symptoms; lastly, those in which they do not observe any regular period, and do not give any warning of their approach. In the two first kinds he asserts, that all the cases which came under his care, and which were not very few, had been cured by Stramonium. In those of the third kind he found it of no benefit whatever.

"Dr. Archer of Maryland has formed distinctions nearly similar in the application of Stramonium to epilepsy.

"In a case of tic douloureux of long standing, I found the extract, taken in as large doses as the stomach would bear, to afford decided relief. Several practitioners have spoken to me of its efficacy in this formidable disease. It should be taken in large doses, and the system kept for some time under its influence.

"Within a few years, the thorn apple has attracted much notice, both in Europe and in this country, as an efficacious palliative in asthma and some other affections of the lungs, when used by smoking, in the same manner as tobacco. The practice was first suggested by the employment of another species, the *Datura ferox*, for similar complaints, in the East Indies. An English gentleman, having exhausted the stock with which he had been supplied of the oriental plant, was advised by Dr. Sims to have recourse to the common Stramonium as a substitute; and upon trial, experienced the same benefit as he had done from the former species. This instance of success led to further trials, and in a short time several publications appeared, containing cases of great relief afforded by smoking this plant in the paroxysms of asthma. Many individuals, of different ages, habits, and constitutions, had used it with the effect of producing immediate relief, and of



terminating the paroxysm in a short time. The efficacy however of this medicine was called in question by Dr. Bree, a physician well known by his elaborate treatise on asthma, who published in the Medical and Physical Journal a letter, containing the result of a great number of unsuccessful trials of *Stramonium* in asthmatic cases. It may be doubted whether any other physician has been so unfortunate in its use as Dr. Bree, since he affirms that not one case of those under his care was benefited by it. Certain it is, that in this country the thorn apple is employed with very frequent success by asthmatic patients, and it would not be difficult to designate a dozen individuals in Boston and its vicinity, who are in the habit of employing it with unfailing relief in the paroxysms of this distressing complaint. The cases, which it is fitted to relieve, are those of pure spasmodic asthma, in which it doubtless acts by its sedative and antispasmodic effects. In those depending upon effusion of serum in the lungs, or upon the presence of exciting causes in the first passages, or elsewhere, requiring to be removed, it must not be expected that remedies of this class can afford benefit. In several cases of plethoric and intemperate people, I have found it fail altogether, and venesection afterwards to give speedy relief.

“The part of the plant, which I have employed for smoking, is the leaf prepared in the same way as tobacco. The root, which has commonly been the part used, is more woody and fibrous, and possesses less of the juices of the plant, than its more pulpy and succulent parts. The root also, being strictly annual, has no opportunity to accumulate the virtues of the plant, beyond any other part.

“In the seventh volume of the *Medico-Chirurgical Transactions*, for 1816, is a paper on the properties of the *Stramonium* by Dr. Marcet of London, Physician to Guy's Hospital. As the result of his experience, it appeared that this medicine taken internally had relieved acute pains of various kinds, more effectually than any other narcotic substance. Its usual effects under his observation, when administered in appropriate doses, in chronic diseases attended with acute pain, were, to lessen powerfully and almost immediately, sensibility and



pain, to occasion a sort of nervous shock, which is frequently attended with a momentary affection of the head and eyes, with a degree of nausea, and with phenomena resembling those produced by intoxication; to excite in many instances nervous sensations, which are referred to the œsophagus or bronchiæ or fauces, and which sometimes amount to a sense like suffocation; to have rather a relaxing, than an astringent effect on the bowels; to have no marked influence on the pulse, except in a few instances to seem to render it slower; to produce but a transitory and inconsiderable dilatation of the pupil, and to have but little immediate tendency to produce sleep, except from the state of comparative serenity and ease, which follows the preceding symptoms.—In some instances its beneficial effects were obtained without the patient experiencing any of the uneasy sensations above mentioned.

“The cases in which Dr. Marcet employed the Stramonium, with their results, appear in the following summary. In four cases of sciatica, decided benefit was obtained. The efficacy of the medicine was still more strongly marked in two cases of sciatica combined with syphilitic pains. It failed in two instances of diseased hip joint. It produced considerable relief of pain in a case of supposed disease of the spine, followed by paraplegia; and likewise in one of cancer of the breast. It allayed materially the pain occasioned by an acute uterine disease. It was of great and repeated utility in a case of tic douloureux, its utility in a second case of the same description was very doubtful, and in a third it entirely failed.

“There are some authorities for the success of Stramonium in chorea. Professor Chapman of Philadelphia has found it of use in dysmenorrhea, also with or without mercury in syphilitic and scrophulous ulcers of ill condition.

“The external use of Stramonium is of much older date than its internal exhibition. Gerarde in his Herbal, published in 1597, says, ‘The iuyce of Thorne apples, boiled with hogs’ grease to the forme of an unguent or salve, cureth all inflammations whatsoever, all manner of burnings or scaldings, and that in very short time, as myself have found by my dayly practise, to my great credit and profit.’ Others,

since the time of Gerarde, have used this preparation, if not with the same gratifying success, at least with some benefit as an anodyne, sedative application. It mitigates the pain in burns and inflammatory tumors, and promotes the cure of certain cutaneous eruptions. In some irritable ulcers with thickened edges and a sanious discharge, I have found it remarkably efficacious in changing the condition and promoting the granulations and cicatrization. In painful hemorrhoidal tumors, the ointment of Stramonium, with the ointment of acetate of lead, gives, in many cases, very prompt and satisfactory relief, being in this respect inferior to no application, with which I have been acquainted.

“Applied topically to the eye, the preparations of Stramonium diminish the sensibility of the retina, and relax the iris. From this effect it is employed by many surgeons to dilate the pupil, as preparatory to the operation for cataract.

“The virtues of Stramonium appear to be seated in an extractive principle, which dissolves in water and alcohol, but most readily in the former. It is copiously precipitated from the infusion by muriate of tin. With sulphate of iron it gives a deep green colour, and with gelatin suffers no change. Water distilled from the plant has the sensible qualities in a slight degree, but does not seem to possess the medicinal powers of the plant. Dr. S. Cooper, in a valuable dissertation on this plant, says, that an ounce of the distilled water was taken into the stomach with little or no effect. The same gentleman states, that upon evaporating the infusion of Stramonium, he observed a large number of minute crystals, resembling particles of nitre. Thinking it possible that these might be something analogous to the crystals, said to be obtained by Derosne from opium, and by him denominated the narcotic principle, he repeated the experiment by carefully evaporating separate decoctions of the green and dried leaves. No crystals however were discoverable at any stage of the process, either to the touch, or to the eye assisted by a strong magnifier.

“The forms in which the Stramonium is prepared for use, are the powder, the inspissated juice, the extract, the tincture



and the ointment. The *powder* should be made as soon as the plant is dry, and kept in close stopped bottles.—The *inspissated juice* is made by compressing the bruised leaves in a strong bag, until the juice is forced out. This is to be evaporated in flat vessels, at the heat of boiling salt water, to the thickness of honey; it is then suffered to cool, put up in glazed vessels and moistened with alcohol. The *extract* is prepared by immersing a pound of the leaves in three gallons of water and boiling down to one. The decoction should then be strained, and stand six hours to settle, after which it may be drawn off and evaporated to the proper consistence. When the seeds are used, the decoction should stand a longer time to separate the oil with which the cotyledons abound, before evaporation. A larger amount of extract may be obtained by boiling the portion, which has been used, a second time, in a smaller quantity of water, and mixing the two decoctions before evaporation. For the *tincture* one ounce of the dried leaves is to be digested for a week in eight ounces of proof spirit, and filtrated through paper. In making the *ointment*, a pound of the fresh leaves may be simmered in three pounds of hogs' lard until the leaves become crisp. It is then to be strained, and cooled gradually.

“The period for gathering the leaves is from the time the plant begins to flower, until the arrival of frost.

“As the preparations of Stramonium are liable to vary in strength, according to the circumstances under which they are made, it is always prudent to begin with the smallest dose, and repeat it about three times a day, increasing each dose until the effects begin to appear in the stomach or head.

“The commencing doses of the Stramonium, when properly prepared, are as follows.

“Of the powdered leaves	1 grain.
powdered seeds	$\frac{1}{2}$ a grain.
inspissated juice or extract	1 grain.
extract of the seeds	from $\frac{1}{4}$ to $\frac{1}{2}$ grain.
tincture	from 15 to 20 drops.



## "BOTANICAL REFERENCES.

"*Datura Stramonium*, LINNÆUS *Sp. pl. Fl. Suec.* 185, &c.—GRONOVIIUS *Fl. Virg.* 23.—OEDER. *Fl. Danica* 436.—BLACKWELL *t.* 313.—GMELIN *Iter.* i. 43.—POLlich. *Pulatin.* 224.—HOFFMANN *Germ.* 77.—ROTH *Fl. Germ.* i. 92, &c.—WOODVILLE *t.* 124.—CURTIS *Lond.* vi. *t.* 17.—SMITH *Fl. Brit.* 254.—*Engl. Bot.* *t.* 1288.—PURSH *Amer.* 141.—ELLIOTT *Carol.* i. 275.—*Stramonium foliis angulosis*, &c. HALLER *Helv.* 586. *Nuci metellæ congener planta*, CAMERARIUS *Epitome* 276.—*Solanum fetidum* pomo spinoso, oblongo, &c. BAUHIN *pin.* 168.—*Stramonium spinosum*, GERARDE *Herbal* 348.

## "MEDICAL REFERENCES.

"STORCK de *Stramonio*, &c.—LINDENSTOLFE de *venenis*, 531.—SAUVAGES *Nozol.* 2. 430.—GEEDING in *Ludwigs Adversaria* i. 345.—MURRAY *App. Med.* i. 670.—CULLEN *Mat. Med.* ii. 281.—FOWLER in *Med. Comment.* v. 161.—ODHELIUS *cit. Med. Comment.* v. 161.—PAPIN in *Phil. Trans.* abr. vi. 53.—RUSH in *Philad. Trans.* i. 384.—Schoepf. 24.—WEDENBERG in *Med. Comment.* iii. 18.—BEVERLY. *Hist. Virg.* p. 121.—Medical and Physical Journal, vol. xxv. & xxvi. in various places. COOPER in *Caldwell's Theses*, vol. i.—BARTON, *Coll. Mat. Med.* 46.—CHAPMAN in edit. MURRAY 146.—THATCHER, *Disp.* 205.—MARCET *Medico-Chirurg. Trans.* vii."

In concluding, it is but just to observe, that the typographical part of the execution of this work is uncommonly fine, and that the paper on which it is printed is of a quality which has, we believe, been seldom if ever exceeded in the manufactories of this country.

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*Surgical Essays.* By ASTLEY COOPER, F. R. S. and BENJAMIN TRAVERS, F. R. S. Part I. with numerous Plates.

[From the Medico-Chirurgical Journal and Review, for March, 1818.]

THE founders and supporters of public hospitals, those truly benevolent and *Christian* institutions, had little idea of the extent of the benefits which thence flow to *society at large*. Numerous as are the sufferers who *there* find an asylum during the pangs of disease, and experience the kindness, the humanity, and the skill of the medical officers, they form but a drop in the ocean, compared with those scattered over the earth, and who indirectly participate in the practical knowledge acquired in those inimitable schools of instruction and

medical science, through the medium of the medical and surgical pupils there educated. But a great desideratum yet remained. The *pupils* of these institutions are incapacitated, from their ages and various other circumstances, for the important office of recording, analysing, and arranging the mass of materials which every day present themselves to their view. This requires the hand as well as the head of a *Master*; and truly happy are we to see the good work commencing and radiating from various centres, and thus diffusing the beams of science through every avenue and ramification of the profession. This indeed was a duty more incumbent on the superior medical officers of public hospitals to perform, than the daily routine of visits. They are the depositaries of practical knowledge, *ex officio*; but they only hold it in trust for the benefit of their less fortunate brethren, who anxiously look up to them for all great improvements in the science. It is true, they are not *compelled* to disseminate or communicate the knowledge they have thus acquired, and it is painful to reflect that few of them, *comparatively speaking*, have been generous enough to do so voluntarily; but, as the brave are always the most gentle, so the truly learned and experienced in the profession are always the most liberal; and the volume before us is an incontestable proof of this position. What can an Astley Cooper gain by the drudgery of publication? Does *his* reputation require any additional wings?—We may answer, that he can only gain the gratitude of the profession, and the blessings of the sick man, who knows not to whom he is indebted for the preservation of his life, but whose blessing shall be laid up—“where moth doth not corrupt, nor thieves break through and steal.”

“Homines ad deos nullâ re propius accedunt, quam salutem hominibus dando.” CICERO.

But to our subject. This is a work in every way worthy of a Cooper and a Travers. They have wisely determined to confine their reports to the *useful* in preference to the *wonderful*; to “a narration that includes more of the common than the



rare; for it is neither in the contemplation nor desire of the Editors to promulgate *marvellous* cases. The *singularity* of a case may be a good reason for its publication, but its *importance* is a better; and, in general, the greater its singularity, the less its importance." *Preface*, p. xii.

How often has this important truth flashed on our minds! How seldom has it proved the guide of either individuals or societies!—The work consists of six papers, three by each of the Editors. The first is on Dislocations, by Mr. Cooper; the second, on Iritis, by Mr. Travers; the third is the highly interesting Case of Ligature of the Aorta, by Mr. Cooper; the fourth, on Phymosis and Paraphymosis, by Mr. Travers; the fifth, on Exostosis, by Mr. Cooper; the last, on Wounds and Ligatures of Veins, by Mr. Travers. Of each of these, excepting one, we shall endeavour to give some account. The excepted paper is on Iritis, by Mr. Travers, which is so singularly interesting and important, that we mean to make it the subject of a *short* separate analysis on a future occasion. It is a fine specimen of accurate observation and legitimate analytical induction, tending to stamp an intrinsic value on every thing that flows from the same source.

1. *Dislocations*. Mr. Cooper, in his usual plain but energetic manner, forcibly points out the importance of *articular* anatomy, and the disgrace, not to say ruin, which may result from ignorance on this subject. He justly observes, that students will "often dissect the muscles of a limb with great neatness and minuteness, and then throw it away without any examination of the ligaments, the knowledge of which, in a surgical point of view, is of infinitely greater importance; and from hence arise the numerous errors of which they are guilty when they embark in the practice of their profession." P. 2.

To give any thing like a connected view of a paper in which there is scarcely a superfluous syllable, would be impossible in the limits of an analysis; and therefore we must confine ourselves to a few extracts. This is of the less consequence, as the work only wants *annunciation* to excite the general demand for its entire perusal. The following passage is long, but



it is too important to be condensed, and will offer a fair example of the valuable information which the reader is to expect from the pen of Mr. Cooper.

*“Means of Reduction.”*—The means employed for the reduction of dislocations are either constitutional or mechanical. It is generally wrong to employ force only, as it becomes necessary to use it in such a degree as to occasion violence and injury, and it will, in the sequel, be shown, that the most powerful mechanical means fail, when unaided by constitutional. The power of the muscles, in the first instance, is to be duly appreciated, which forms the principal cause of resistance. The means to be employed for this purpose, are, to produce a tendency to syncope, and sometimes fainting itself, by the abstraction of a quantity of blood, and by placing the patient in a warm bath to occasion a similar feeling. If the blood be removed quickly, by a large orifice, it is known that fainting is more readily produced, and a hot bath from 100° to 110° will often not produce syncope, unless blood has been previously drawn.

“But of late years I have practised another mode of lowering the action of the muscles, by exhibiting nauseating doses of tartarized antimony. This, given in repeated doses, produces sickness, but not vomiting. Emetics have been recommended, and there is no doubt but the state of nausea which they produce is useful, but the vomiting is, in itself, of no use, for as soon as the nauseating effect is produced, the muscles lose their tone, and dislocations can be reduced with comparatively less effort, and at a more distant time from the accident, than can be effected in any other way. Two cases are related in the following pages: one from Mr. Norwood, Surgeon, Hertford, the other from Mr. Thomas, apothecary to St. Luke’s Hospital; in which, by the combination of bleeding, warm bath, and nauseating doses of tartarized antimony, dislocations were reduced at a period from the accident, greater than I have ever known in any other example. One of these cases occurred at Guy’s, and the other at St. Thomas’s Hospital, at the time these gentlemen were officiating as dressers. (See Cases of Dislocation on the Ilium.)

"The effect of opium I have never tried, but it would probably be useful from its power of diminishing the nervous influence.

"The reduction of the bone is to be attempted after lessening the powers of the muscles, by making an extension of the limb, by fixing one bone and drawing the other towards its socket. One great cause of failure, in the attempt to reduce dislocations, arises from insufficient attention to not fixing that bone in which the socket is placed. As for example, in attempting to reduce a dislocation of the shoulder, if the scapula be not fixed, or one person pulls at the scapula and two at the arm, the scapula is necessarily drawn with the os humeri, and the extension is very imperfectly made; the one bone, therefore, must be as firmly fixed as the other is extended.

"The force may be applied either by the exertion of assistants, or by a compound pulley, but the object is to extend the muscles by gradual, regular, and continued force; the pulley, in cases of difficulty, should always be resorted to; its force may be directed by the surgeon's mind; but when assistants are employed, their exertions are sudden, violent, and often ill directed, and the force is more likely to produce laceration of parts, than to restore the bone to its situation. Their efforts are also often uncombined, and their muscles necessarily fatigue, as those of the patient whose resistance they are employed to overcome.

"In dislocation of the hip-joint, pullies should always be employed, and in those dislocations of the shoulder which have remained long unreduced, they should always be resorted to. I do not mean to doubt of the possibility of reducing dislocation of the hip by the aid of men, but to point out the inferiority of this mode to pullies. Most writers on surgery have hinted at the use of pullies, but they have not duly appreciated them: my good master, Mr. Cline, whose professional judgment no man can deny, always strongly recommended them.

"During the attempt to reduce luxations, the surgeon should always endeavour to obtain a relaxation of the stronger



muscles. The limb should therefore be kept in a position between flexion and extension, as far as it can be. Who has not seen, in the attempt to reduce a compound fracture, in the extended position of a limb, the bone incapable of being brought in apposition under the most violent efforts, quickly replaced by an intelligent surgeon, who immediately directed the limb to be bent, and the muscles to be placed in a comparative state of relaxation.

"A difference of opinion prevails, of whether it is best to apply the extension on the dislocated bone, or on the limb below. Mr. Boyer, who has long taken the lead in surgery in Paris, prefers the latter mode. As far as I have had an opportunity of observing, it is generally best to apply the extension to the bone which is dislocated. There are exceptions to this however, in the dislocation of the shoulder, which I generally reduce by placing the heel in the axilla, and by drawing the arm at the wrist in a line with the side of the body; as when the arm is placed close to the side, the pectoral muscle and the latissimus dorsi are brought into a state of relaxation, and they form a powerful opposition when the arm is carried far from the side.

"Great advantage is derived in the reduction of dislocations, from attending to the patient's mind; the muscles opposing the efforts of the surgeon, by acting in obedience to the will, may have that action suspended, by directing the mind to other muscles. Several years ago, a surgeon, in Blackfriars Road, asked me to see a patient of his with a dislocated shoulder, which had resisted the various attempts he had made at reduction. I found the patient in bed, with his right arm dislocated; I sat down on the bed by his side, placed my heel in the axilla, and drew the arm at the wrist; the dislocated bone remained unmoved. I said, rise from your bed, sir; he made an effort so to do, whilst I continued my extension, and the bone snapped into its socket: for the same reason, a slight effort, when the muscles are unprepared, will succeed in reduction of dislocation, after violent measures have failed." P. 25.

Mr. Cooper next lays down admirable, though concise in-



structions, for the diagnosis and reduction of the individual dislocations. In these instructions the accurate anatomist and expert surgeon are every where conspicuous, as well they may be. Cases, in elucidation, are clearly but succinctly narrated. We shall quote one as a specimen.

"I was desired to visit a man, aged 28 years, who, by the overturn of a coach, had dislocated his left hip more than five weeks before, and who had been declared not to have a dislocation, although the case was extremely well marked. His leg was full two inches shorter than the other; his knee and foot turned inwards, and the inner side of the foot rested opposite to the malleolus internus of the other leg. The thigh was slightly bent towards the abdomen, and the knee was advanced over the other thigh. The head of the thigh-bone could be distinctly felt upon the dorsum of the ilium; and when the two hips were compared, the natural roundness of the dislocated side had disappeared. I used only mechanical means in my attempts at reduction, and although I employed the pullies, and varied the direction of repeated extensions, I could not succeed in replacing the bone, and this person returned to the country with the dislocation unreduced." P. 35.

In the section on the fractures of the os innominatum, which are liable to be mistaken for dislocations, Mr. C. displays his usual accuracy of observation, and perspicacity of ideas. In half a dozen lines he conveys a clearer notion of things, than others would do in a whole page. But we must refer to the work itself; for, happily, this is a volume which cannot be analysed, on account of the intrinsic value and concentration of every part. The plates, though lightly executed, express with ease and accuracy the subject which they are designed to represent. Those, in particular, showing the modes of applying the apparatus for the reduction of hip-joint dislocations, are peculiarly satisfactory. The *subject* of dislocation is continued to the Second Part.

2. The second paper in the volume is on *Iritis*, by Mr. Travers, which we shall reserve for a short separate Analysis in a future Number of this Journal. We therefore pass on to Mr. Cooper's

*Case of Ligature in the Aorta.* Mr. C. fears that the title of this paper may impress the reader with an idea that nothing could justify him in performing the operation. He is quite right. We have heard this observation several times made, and we have invariably repelled the charge. We are not among the cold and calculating surgeons, who would risk incurring a particle of popular clamour, to save the life of a fellow-creature, by attempting what was not sanctioned by written or oral authority. In this unsuccessful enterprise, Mr. Cooper has gained more real and permanent glory, than in all the operations he ever performed. But we are far from thinking the attempt unsuccessful, *in the end*, though it was so in the *beginning*. The derangement of parts, and the constitutional irritation that resulted thence, were such as precluded almost the hope of success. But the object is gained; the knowledge of the possibility of effecting the arrest of blood through the aorta, and that without any material injury to the parts through which the operation was carried, or shock to the vascular system, by the sudden arrest of so immense a current of blood. Every day impresses us more and more with the admiration of the wonderful—the almost omnipotent powers of Nature, in compensating for the losses or accidents to which our frames are subjected. Has not the experiment of Dr. Parry proved, that when a carotid artery was tied, new shoots sprouted out from the cardiac portion of the artery, traversed round the ligature, and dipped into the excommunicated portion, thus carrying on, through many small channels, the current that previously ran through one? What are we to expect after this? In respect to the abdominal aorta, when we survey the inosculations of the mammary and epigastric, the superior and inferior mesenterics, the lumbar arteries, &c. we cannot, for a moment, hesitate to believe that the mere obstruction of circulation in the descending aorta would be got over by the powers of Nature; and that it is principally the violence of the operation itself that we have to dread. This indeed is almost proved by a case of natural obstruction in the aorta brought forward by Mr. Cooper, and which was observed in the Hotel-Dieu in 1789. The thoracic arteries were found so



enlarged, that they could be felt running down the sides of the chest tortuous and dilated. The aorta, immediately beyond its arch, was contracted to the size of a writing quill; and the case altogether clearly demonstrated, that the greater part of the blood usually conveyed by means of the aorta through the thorax, is capable of finding a circuitous course by the branches of the subclavian and intercostal arteries. It is also well known that Mr. Cooper has, several times, passed ligatures round the aortæ of dogs, and found the blood was readily transmitted by anastomosing vessels to the posterior extremities of the animal. We now come to this interesting and melancholy case.

C. H. 38 years of age, had fallen against the corner of a chest thirteen months previously, and received a violent blow in the left groin. On the following day the thigh was much swelled and discoloured; but after a confinement of three weeks, the limb returned to its natural size, and he resumed his employment, and worked, though with pain and difficulty, till within a fortnight of his entering the hospital, 9th of April, 1817; when there appeared a swelling in the groin, partly above and partly below Poupart's ligament, with an obscure pulsation, and concluded to be aneurismal. The swelling was now diffused, with several large veins crossing its surface, and accompanied with much pain on pressure. In three days the swelling increased to double the former size, and the pulsation became less distinct. The tumour was so situated that it was impossible to tie the artery above the sac without cutting into the abdomen. Various temporary measures were put in force, but at length ulceration began, and on the 20th of May, hæmorrhage made its appearance. On the 25th, at nine o'clock at night, the case was desperate, and death was ready to snatch its victim. Anxious to avoid opening the abdomen, in order to secure the aorta near its bifurcation, Mr. C. determined, if possible, to pass a ligature around the artery *from within the aneurismal sac*. With this view he made a small incision upon the tumour, about two inches above Poupart's ligament, and through a small opening in the sac, passed down his finger to feel for the aperture of the artery, but found only a chaos of



broken coagula, and that the artery was destroyed within the parietes of the aneurism. This attempt therefore failed. As Mr. Cooper was quitting the patient's bedside, a sentiment of generous pity and manly resolution overcame all other considerations, and he nobly determined to tie the aorta, and thus afford the only ray of hope, and the only chance of saving his patient from *instant* dissolution.

Here is one of those traits of magnanimity which ennoble human nature, and which shed a conviction over the soul of man, that he is yet destined for "another and a better world." This "pleasing awful thought" is only alloyed by the bitter reflection, that there are men who, insensible to the feelings of humanity and the loud and eloquent appeal of Nature, could coolly condemn as rash, and almost impious, this truly Christian effort to turn aside the dart which had already sped from the hand of death towards the unfortunate victim! "*Homo solus aut Deus aut Dæmon!*"

*Operation.* "The patient's shoulders were slightly elevated by pillows, in order to relax, as much as possible, the abdominal muscles; for I expected that a protrusion of the intestines would produce embarrassment in the operation, and was greatly gratified to find that this was prevented by their empty state, in consequence of the involuntary evacuation of *fæces*; and here let me remark, that I should, in a similar operation, consider it absolutely necessary, previously to empty the bowels by active aperient medicines.

"I then made an incision, three inches long, into the *linea alba*, giving it a slight curve to avoid the umbilicus; one inch and a half was above, and the remainder below the navel; and the inclination of the incision was to the left of the umbilicus in this form [  $\int$  ]. Having divided the *linea alba*, I made a small aperture into the peritoneum, and introduced my finger into the abdomen; and then, with a probe-pointed bistoury, enlarged the opening into the peritoneum to nearly the same extent as that of the external wound. Neither the omentum nor the intestines protruded; and during the progress of the operation, only one small convolution projected beyond the wound.

" Having made a sufficient opening to admit my finger into the abdomen, I then passed it between the intestines to the spine, and felt the aorta greatly enlarged, and beating with excessive force. By means of my finger nail I scratched through the peritoneum on the left side of the aorta, and then gently moving my finger from side to side, gradually passed it between the aorta and spine, and again penetrated the peritoneum on the right side of the aorta. I had now my finger under the artery, and by its side I conveyed the blunt aneurismal needle, armed with a single ligature behind it; and my apprentice, Mr. Hey, drew the ligature from the eye of the needle to the external wound; after which the needle was immediately withdrawn.

" The next circumstance, which required considerable care, was the exclusion of the intestine from the ligature, the ends of which were brought together at the wound, and the finger was carried down between them, so as to remove every portion of the intestine from between the threads: the ligature was then tied, and the ends left hanging from the wound. The omentum was drawn behind the opening as far as the ligature would admit, so as to facilitate adhesion; and the edges of the wound were brought together by means of a quilled suture and adhesive plaster.

" During the time of the operation, the *fæces* passed off involuntarily, and the patient's pulse, both immediately, and for an hour after the operation, was 144 in the minute. He was ordered thirty drops of tincture of opium and camphorated mixture, and the involuntary discharge of *fæces* soon after ceased. I applied my hand to his right thigh immediately after the operation, and he said that I touched his foot; so that the sensibility of that leg was very imperfect.

" For the following particulars I am indebted to Mr. Cox, one of my apprentices.

" At midnight his pulse was 132.

26th. " At one o'clock in the morning, the patient complained of heat in the abdomen, but he felt no pain upon pressure: he said that his head felt hot, and that he had pain in the shoulders; his lower extremities, which were cold soon after



the operation, were now regaining their heat; his body was in other parts covered with a cold sweat. The sensibility of the lower extremities has been very indistinct since the operation.

"At two o'clock, he felt so comfortable from his medicine that he wished to have more of it, and ten drops of tincture of opium were given him; his legs were wrapped in flannel, bottles of hot water were applied to the feet, and he then said that the heat of his belly was lessened.

"At six o'clock the sensibility of his limbs was still imperfect.

"At eight o'clock, A. M. he expressed himself as feeling quite comfortable; he however passed no urine, and had no evacuation; his right limb was warmer than the left, and the sensibility was returning.

"At noon the temperature of the right limb was 94, that of the left or aneurismal limb 87½.

"At one o'clock, P. M. Mr. Cooper visited him; and as he walked up the ward, he appeared much gratified at seeing his patient, who was at the point of death the evening before, and who was now adjusting his bed-clothes, and smiled as Mr. C. approached the bed.

"At three o'clock, after a fit of coughing, the man was much alarmed with the idea of the thread having slipped into the wound: it was a false alarm; but, to prevent the idea of its recurrence, it was fastened to a quill: soon after this he complained of pain in the abdomen; it was not very severe, nor did it last long; readily yielding to fomentations. As he had no evacuation, he was ordered an enema.

"At six o'clock, P. M. he vomited, soon after the glyster had been administered; the heat of the right leg was 96, that of the left or diseased limb 87½.

"At nine in the evening he took half a glass of port wine in warm water, which he immediately rejected; he complained of pain in the loins; his pulse was 104, and feeble; he was very restless; and had an involuntary discharge of *feces*.

"Eleven at night, his pulse was 100 and weak; he still vomited.



27th. "At seven, A. M. the report was that he had passed a restless night; the vomiting had returned at intervals; his pulse was 104, weak, and fluttering; he complained of pain all over his body, more particularly in his head; and the carotids beat with considerable force; he had great anxiety expressed in the countenance, was very restless, and the urine dribbled from him with some degree of pain at the end of the penis.

"At eight o'clock, A. M. the aneurismal limb appeared livid, and felt cold, more particularly around the aneurism; but the right leg remained warm.

"At eleven o'clock his pulse was 120, and weak; he appeared to be sinking. To the questions which were put to him he did not return any answer; he appeared to have an uneasiness about the heart, as he kept his hand upon the left breast. He died at eighteen minutes after one, P. M. having survived the operation forty hours.

"After being informed of his death, I requested Mr. Brookes, of Blenheim Street, to attend with me at the inspection of the body. Mr. Travers, surgeon of St. Thomas's Hospital, Mr. Stocker, apothecary of Guy's, and a large concourse of medical students, attended the examination.

"When the abdomen was opened, we found not the least appearance of peritoneal inflammation, excepting at the edges of the wound. The omentum and intestines were free from any unnatural colour; the edges of the wound were glued together by adhesive inflammation, excepting at the part at which the ligature projected. We were much gratified to find that the ligature had not included any part of the omentum or intestine: the thread had been passed around the aorta, about three quarters of an inch above its bifurcation, and about an inch, or rather more, below the part where the duodenum crossed the artery. Upon carefully cutting open the aorta, a clot of more than an inch in extent was found to have sealed the vessel above the ligature; below the bifurcation, another, an inch in extent, occupied the right iliac artery, and the left was sealed by a third, which extended as far as the aneurism; all were gratified to observe the artery so completely shut in forty hours. The aneurismal sac, which was of a most enor-

mous size, reached from the common iliac artery to below Poupart's ligament, and extended to the outer side of the thigh. The artery was deficient from the upper to the lower part of the sac, which was occupied by an immense quantity of coagulum.

"The neck of the thigh bone had been broken within the capsular ligament, and had not been united." p. 124.

It is evident here that the patient did not die from visceral inflammation, nor the shock of the operation, but solely from the want of circulation in the aneurismal limb, owing to the too advanced stage of the disease.

Our limits prevent us at present from noticing the other papers in this invaluable volume, which few will fail to peruse.

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*Medical Jurisprudence as it relates to Insanity, according to the Law of England.* By JOHN HASLAM, M. D. &c.

[From the London Medical Repository, for June, 1818.]

AN evil as well as a good is attached to facility and grace in literary composition. By a commanding pen, a writer frequently possesses the power of so adorning a subject, as to render attractive what, though interesting in itself, requires some exterior aid in order to make it palatable to readers of a nice and delicate taste; and thus the manner of an author becomes an handmaid to his matter: but the exercise of this very faculty of exciting attention by the charms of style is apt to mislead both writer and reader; and, unless he be upon his guard, even critic also, into the supposition that actual and important information must necessarily be conveyed where there is so much show and seeming.

Of the rectitude of these positions we scarcely know an individual who furnishes a more decided example than the one whose tract is now before us. Dr. Haslam is an able, an inviting author. Even descriptions of diseases, which, as given by most men, merely consist of dry detail, come out from his



hands with a glow of thought and mastery of expression that render them in the highest degree interesting. Let any reader, if any there be, who has not already perused his pages, turn to that part of his *Treatise on insanity* which is devoted to the history, so to call it, of the progress and establishment of mental hallucination; and it is only necessary to suppose such reader gifted with the smallest feeling of the beauties of composition, in order to anticipate his ready acquiescence in what we are now advancing as to the merits of Dr. Haslam. But that, on the other hand, much is often said by this author, which consists of mere words, and nothing more, must likewise be conceded. Indeed the pamphlet now immediately under notice might, perhaps, be adduced as evidence in favour of this last position. This tract, though fascinating in manner, is, it must be confessed, somewhat meagre in matter. The subject, however, upon which it treats, notwithstanding its high interest, does not probably admit of any very satisfactory elucidation; and we cannot but allow that Dr. Haslam has furnished his readers with hints at least of a valuable nature and good practical tendency.

On the head of the essential constituents of the insane state, (which, indeed, is the key-stone to the whole business of medical jurisprudence in reference to insanity,) we think the *Treatise* under notice inculcates a principle which is too much disregarded by many modern writers on mental alienation. It is this—that the foundation of genuine insanity is more or less firmly laid in belief. To us it appears, that without the recognition of this principle as an element of our reasonings on mental health and disease, there would be no such thing as drawing any distinctive line between the hale and the deranged mind; between insane and immoral acts; between deeds calling for commiseration, and those demanding punishment.

“It would be a curious and instructive inquiry (says Dr. Haslam) to ascertain under what circumstances the mind admits, as rules for action, those principles which do not admit of proof: because, if we could detect the manner in which the knot is tied, we might probably be able to unloose it. In the



course of our education we are taught to adopt many maxims, the truth and expediency of which may not be very evident: however, as we advance in life, experience and good sense gradually dispel many of these prejudices and erroneous adoptions. But in the insane mind the same process does not take place, and generally in proportion to the reasoning adduced to confute the delusion, or the demonstration employed to exhibit its absurdity, it becomes more strongly confirmed and inveterately fixed; and the logic brought forward for its refutation, is by the lunatic held as ignorance or misapplication. A person *in* his senses may entertain and believe a number of unfounded and erroneous opinions, but on the exposure of their falsity he is capable of being convinced, *but the madman never is*; and this forms the great distinction between them. The incapability of being convinced of the GOOD and EVIL, RIGHT and WRONG, TRUTH and FALSEHOOD of his BELIEF, is that which, as an intellectual being, renders him different from other men, and constitutes his distemper. To our present purpose, it is immaterial how this arises, the knowledge of its existence is sufficient: and it concerns us but little to ascertain if this state depends on a morbid condition of the intellect itself, or of the organ destined for the display of its phenomena.—*This belief appears physiologically to constitute his disorder.*"

Admitting the rectitude of these positions, it will follow, that actual insanity has something in its essence positively different from mere passion, impulse, or even perversion of feeling; and although we often perceive in the acts of a madman a display of ungovernable impetuosity, connected with a consciousness that the deed he is about to perpetrate is a sin against the laws of society, there is always, at least with very little exception, to be remarked a prevailing conviction of something peculiar attached to his particular case; or that even if the act be admitted to be wrong, he is commanded by his destiny to accomplish a certain purpose, and that command is to him imperative.

A temporary conviction, then, of the reality of impressions,

is the cardinal hinge upon which insanity turns; and this, we repeat, is well pointed out by the author before us.

Dr. Darwin, in that very interesting section of *Zoonomia*, which treats of mental hallucinations, adduces an instance of suicide in an individual who committed the act under the feeling, that "there was nothing in life worth living for but a warm fireside and a pack of cards," of which he was tired, and that therefore he had determined to go out of the world. Now we are free to confess, that in this case we should at the very least have hesitated before the predication of actual insanity, since there was no feeling accompanying the act of its actual necessity, nor any ungovernable impulse urging the perpetration of the deed. To contend against a merciful construction in individual cases of either suicide or the destruction of others, is very remote from our intention; but we would maintain, that self-destruction is not *in se*, and necessarily, an act of madness. "The impotent folly of degrading the carcass," it is moreover far from our wish to defend: but might not lives sometimes be saved by a little less of laxity in deciding upon insanity. The prospect of infamy might probably, in some instances, prove preventive of rash acts; and the *in terrorem* menace of imputed criminality might, perhaps, often serve to check the hand of the suicide. We are aware of the delicacy and difficulty which must ever attend the most conscientious exercise of judgment in these distressing cases; and the little we have ventured to advance on this head, is rather in the way of intimation than of absolute decision. Of this, however, we feel assured, that a persuasion amounting to belief, more temporary or more lasting, more partial or more general, is requisite for the constitution of real madness.

The following we extract from Dr. Haslam's book, as an interesting illustration of the force with which these impressions often seize upon the mind of the maniac, and of the extent to which their operation is frequently carried:—

"A woman about thirty-six years of age, who had been well educated, but whose conduct had not been exempt from some



irregularities, in consequence of intemperance and manifold disappointments, became affected with madness. She was by turns furious and melancholic, and conceived she had murdered one of her children, for which she ought to suffer death. She detailed the manner in which she had destroyed the child, and the motives which actuated her, so circumstantially, and with so much plausibility and feeling, that if I had not known her child to be living I might have been deceived. By her own hands she had repeatedly endeavoured to terminate her existence, but was prevented by constant vigilance and due restraint. Her disposition to suicide was afterwards relinquished; but she still persisted, that for the murder of the child she ought to suffer death, and requested to be sent to Newgate, in order to be tried, and undergo the sentence of the law:—indeed she appeared to derive consolation from the hope of becoming a public example, and expiating her supposed crime on the scaffold. While in this state, and with a hope of convincing her of its safety, the child was brought to visit her. When she beheld it there was a temporary burst of maternal affection; she kissed it, and for a few moments appeared to be delighted:—but a look of suspicion quickly succeeded, and this was shortly followed by a frown of indignation, which rendered the removal of the child a measure of wholesome necessity. Perhaps in no instance was the buoyancy of madness more conspicuous over reason, recollection, and feeling. She insisted they had attempted to impose on her a strange child, which bore a faint resemblance to her own; however, by such subterfuges she was not to be deceived; she had strangled the child until life had totally departed, and it was not in the order of nature that it should exist again. The effect of this interview was an exasperation of her disorder,—she became more cunning and malignant, and her desire for an ignominious death was augmented. To render this more certain, and accelerate her projected happiness, she enticed into her apartment a young female patient, to whom she appeared to be attached, and having previously platted some threads of her bed-quilt into a cord, she fixed it round the neck of the young woman, and proceeded to strangle



her. Fortunately some person entered the room, and unloosed the cord in time to save her. When this unhappy maniac was questioned concerning the motive which induced her to attempt the destruction of a person for whom she had manifested kindness, she very calmly replied, that as the murder of her own child was disbelieved, she wished to exhibit a convincing proof of the ferocity of her nature, that she might instantly be conveyed to Newgate, and hanged, which she desired as the greatest blessing. With considerable satisfaction I may add, that in a few months, notwithstanding her derangement had been of three years' duration, this woman perfectly recovered, and for a considerable time has performed the duties of an important and respectable office."

Although, however, "it is not eccentricity, habitual gusts of passion, ungovernable impetuosity of temper, nor the phrensy of intoxication, but a radical perversion of intellect," that ought to be sufficient to determine the insanity of acts, we do sometimes witness the spontaneous and sudden commission of deeds apparently without motive, and to no end: the persons who have perpetrated the acts in question not being able to explain the principles which actuated them, from an entire want of recollection that such transactions have had place. This species of insanity has not, Dr. Haslam says, been hitherto sufficiently noticed, although it deserves the fullest consideration. The following is one of the examples of it with which he presents his readers:—

"A very powerful man, above the ordinary stature, who in his youth had been subject to epileptic attacks, and frequently to intervals of sullen abstraction, which increased after the epileptic fits had subsided, became suddenly furious, and during the transports of his disorder destroyed two children and a woman. For this act there appeared to be no motive. He was ordered to be confined, where he continued until his death. For many years during his seclusion I had constant opportunities of seeing and conversing with him. He was ordinarily in a very tranquil state, and did not discourse irrationally;—indeed there was no particular subject on which his mind appeared to be disarranged, nor were there any persons against

whom he entertained an aversion. Much of his time was passed in reading, which he said afforded him great consolation. On many occasions I endeavoured to draw from him some account of the motives which induced him to destroy the persons above mentioned; but he uniformly and steadily persisted that he had no recollection whatever of such occurrence. He said, he understood he had done something which was very wicked, and for which he was confined; and which he had no doubt was true, from the respectability of the persons who informed him of his crime; but he thanked God he had no more memory of what had passed than if it had been committed in his sleep.—During the years of his confinement he had many furious paroxysms; and in order to be fully satisfied of the truth of his asseverations as to his want of recollection during these attacks, he was once blooded at the commencement of the paroxysm, although with considerable difficulty, and on another occasion cupped when its violence was subsiding,—yet when he was restored to his ordinary state of tranquillity, he neither recollected the persons who were present, nor the operations which had been performed.”

Even idiots, (our author adds) who are ordinarily tranquil, will sometimes burst into paroxysms of fury, and without being able to explain, apparently without knowing any thing of the why and the wherefore, will “deal indiscriminate destruction to those around them.” “These states (he says) have been mentioned, that they may be recognized by the medical practitioner, and become known to the advocate, in order that he may apply them to the existing law.”

Of feigned insanity, when it is assumed in order to defeat the progress of justice, the distinction is to be made by watching the individual when he supposes himself alone, and by carefully reading the countenance, which can never be made to assume “that peculiarity of look which so strongly impresses an experienced observer.” Hill observes, that a peculiar factor in the exhalations almost invariably accompanies the maniacal state, and for the most part the sane and insane person are differently affected by drastic drugs. Both these writers, however, agree that the affectation of madness always



exhibits such inconsistencies as to render the imposture of easy detection.

The converse inquisition is attended with more difficulty, viz. that of determining upon the existence of insanity, when it is the design of the person to conceal his malady from rigid scrutiny. Madness, it is known to all, is often confined to one particular; and, unconnected with this particular, the insane are often so far from being deranged as to evince a more than ordinary penetration and clearness of judgment. The circumstance will recur to the recollection of many, of a lunatic having so far, and for such a length of time, conducted himself as one entirely free from disorder, that he was upon the point of receiving his discharge, when being called upon to put his signature to a document, he signed himself CHRIST. The celebrated Burke, we were informed but a little time since by the keeper of St. Luke's, conversed with a man in that hospital with so much satisfaction, that he began to exclaim upon the injustice and cruelty of dooming such an individual to the stigma of madness, and confining him in the walls of a madhouse. The keeper, somewhat nettled with the remonstrance of the senator, which became a little personal, touched the string upon which he knew the insanity was suspended, and the madman immediately burst into such ungovernable fury, that Mr. Burke hastened down stairs, and left the house with the utmost precipitation and fear. In some cases, indeed, the very acuteness and ingenuity displayed may prove, connected with other circumstances, a ground of suspicion; and even in the lucid state of the mind, there is in the countenance and eye of the deranged, for the most part perhaps to be observed, that peculiar cast of suspicious and cunning expression, which to an individual who has made the physiognomy of the distemper his study, is so obviously characteristic of the insane state.

"It may here be proper to notice, that in the criminal court the testimony of others is sufficient to establish the insanity of the prisoner. Under a writ de Lunatico Inquirendo, super-added to the testimony of others, the person supposed to be insane is usually produced before the commissioners and jury, and by them examined, in order to confirm or invalidate the



evidence which has been adduced, and to satisfy their minds that he *is* a lunatic at the time of their inquiry. Although there is much fairness and impartiality in the examination of the patient by the commissioners and jury, to ascertain by actual inquiry that his state of mind tallies with the evidence deposed; yet it sometimes occurs, that the patient, fully aware of the proceedings, will by subtlety endeavour to defeat them. He will artfully conceal his real opinions, and even affect to renounce such as have been deemed proofs of his insanity; and on many occasions he has been so skilfully tutored, as to foil the united penetration of lawyer and physician. It is on such occasions that the sagacity and experience of the medical practitioner are demanded, and it will in some instances occupy a considerable time to institute such examination as shall suffice to unravel the real state of his opinions. It is nearly impossible to give any specific directions for conducting such examination as shall inevitably disclose the delusions existing in the mind of a crafty lunatic; but in my own opinion it is always to be accomplished, provided sufficient time be allowed, and the examiner be not interrupted. It is not to be effected by directly selecting the subjects of his delusion, for he will immediately perceive the drift of such inquiries, and endeavour to evade, or pretend to disown them:—the purpose is more effectually answered by leading him to the origin of his distemper, and tracing down the consecutive series of his actions and association of ideas:—in going over the road where he has stumbled he will infallibly trip again. If in a case of actual insanity the medical practitioner, from inattentiveness, mistake, or want of experience, should fail to expose the real condition of the patient's intellect, and he should be found not lunatic, he would be set afloat, to pursue the dictates of his perilous volition; he might, uncontrolled, dissipate his property, and reduce himself and family to beggary:—if his life were insured, if he subsisted on an annuity, or held a commission in the naval or military service, he might wander and destroy himself, and thereby deprive his successors of their immediate support or expected benefit:—or he might commit some outrage for which he would be arraigned in a criminal court. The record of hav-

ing been found not lunatic, by a jury legally constituted to inquire into the state of his mind, would be the strongest bar to a plea of insanity in a criminal court, who, after such proceedings, would be little disposed to credit the theories of medical metaphysicians."

One of the greatest difficulties attending our judgment on mental soundness, hinges upon the determination which the medical man is often called upon to make respecting the capacity or incapacity of the individual to conduct his own affairs; for "although a person might labour under a variety of mental infirmities, which by medical practitioners might be technically denominated false perception, delusion, hallucination, &c.; still if the symptoms did not go to the extent of disqualifying him from conducting himself and managing his own affairs, such symptoms, in a legal point of view, would probably not amount to insanity, nor justify the restraint of a commission of lunacy." The present Chancellor, in a recent decision, makes the distinction to turn upon the notion of soundness or unsoundness of mind. "It appears to me (says his lordship,) to have been established, that whatever be the degree of weakness or imbecility of the party, whatever may be the degree of incapacity of the party to manage his own affairs, if the finding of the jury is only that he was of an extreme imbecility of mind, that he has an inability to manage his own affairs; if they will not proceed to infer from that, in their finding, upon oath, that he is of *unsound* mind, they have not established by the result of the inquiry, a case upon which the Chancellor can make a grant, constituting a committal either of the person or the estate."

This requirement appears to Dr. Haslam principally objectionable on the ground, that it would designate that state which is decidedly the result of *mere* bodily disease,\* a condition of unsoundness or actual derangement of mind:—

\* Even idiopathic, or primary madness, must, in one sense, of necessity be a *bodily disease*; that is, the deviations from the standard of sanity must either be produced by, or at least accompanied with, some changes in corporeal conditions; but by bodily, as opposed to mental diseases in the text, are meant those affections of an obvious and violent kind, by which the brainular functions are impaired.—REV.



"It frequently occurs that those of extensive capacity and high attainments are, by an apoplectic or paralytic attack, suddenly deprived of their intellectual faculties, and reduced to the state of an idiot, *ex nativitate*. Is it in this case necessary, for the legal protection of the party, to insist on the hypothesis of unsoundness? Is it insufficient to detail the miserable remnants of his former state, and exhibit to the jury the shocking spectacle? Must there be a compulsion to infer, that this abolition of the faculties amounts to evidence of the unsoundness of his mind?"

These objections are, we must confess, forcible; but still, without some positive demarkation being made between mere mental imbecility, from whatever cause arising, and actual alienation of mind, it would appear to be a matter of the most difficult kind to determine upon the legality of forcibly, that is, against the consent of the party, delivering over the management of himself and his affairs into the hands of others. A laxity in this particular would open a door for the entrance and exercise of the worst of motives: but, on the other hand, much injury is often done to family property by the imbecile and consequently erroneous management of the superannuated, or such as have been seized with apoplectic or paralytic disorders; but who are, notwithstanding, no otherwise insane, than the abolition of memory makes them. Dr. Haslam states, that "if a person were capable of enumerating to the number ten, and knew the force and value of the separate units, he would be fully competent to the management of property." But we are disposed to suspect that attention and memory might be capable of being carried as far, and even further than this, in its application to immediate objects made to pass before the mind; but that it nevertheless would be unequal to that compass of recollection, and stretch of understanding, which is necessary to the management of worldly affairs.

The last difficulty to which Dr. Haslam alludes as attendant upon these investigations, is presented in the question respecting the state of mind under which a person may legally dispose of his property by will. On this "perhaps insuperably difficult" subject, we shall permit our author to speak for



himself; and with the following extract conclude our analysis:—

“According to the legal interpretation of a lunatic, he ought, in common justice, at those bright periods when he possesses an *extremely sound mind*, to be lawfully allowed the free and valid exercise of his volition. But as the term *interval* is extremely indefinite, as applied both to time and space, it is the province of the law to define its duration and extent. As a constant observer of this disease for more than twenty-five years, I cannot affirm that the lunatics with whom I have had daily intercourse have manifested these alternations of insanity and reason. They may at intervals become more tranquil, and less disposed to obtrude their distempered fancies into notice. For a time their minds may be less active, and the succession of their thoughts consequently more deliberate; they may endeavour to effect some desirable purpose, and artfully conceal their real opinions, but they have not abandoned or renounced their distempered notions. It is as unnecessary to repeat that a few coherent sentences do not constitute the sanity of the intellect, as that the sounding of one or two notes of a keyed instrument could ascertain it to be in tune. To establish its sanity it must be assayed by different tests, and it must be detected to be as lucid on the subject of those delusions, which constituted its insanity, as on topics of a trivial nature. But the law alone must determine whether it will consider an individual sane act as a lucid interval, and infer soundness of *mind*, which is the abstract term for all the intellectual phenomena, and implies the aggregate of the ideas of the individual, from a single and successful effort.

“If the performance of a sane act by an insane person should be deemed valid, let the converse of the proposition be allowed. Many who have been of accredited soundness of mind, have in some instances made such a testamentary disposition of their property as has astonished those who have survived them. Would the uniform tenor of sane and consistent conduct, for many years, both prior and posterior to such act, be set aside for this individual deed? If it should, then long

existing insanity ought to be overlooked by a single act of consistency. The reader must be aware that this is general reasoning, as no particular case has been the subject of discussion. The search has been directed to a broad and general principle, without prying into subtile distinctions: it is reasoning as far as a knowledge of the human intellect, in its sane and disordered state, may be expected from medical opinion; but it presumes not to dictate to that constituted authority, denominated law, which in all civilized nations has been wisely established for the protection and happiness of the community."

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*The History and Practice of Vaccination.* By JAMES MOORE, Director of the National Vaccine Establishment, Surgeon of the Second Regiment of Life Guards, and Member of the Royal College of Surgeons, London.

*Account of an Epidemic Small Pox, which occurred in Cupar in Fife, in the Spring of 1817; and the Degree of protecting Influence which Vaccination afforded; accompanied with Practical Inferences and Observations.* By HENRY DEWAR, M. D. F. R. S. E. and Fellow of the Royal College of Physicians, Edinburgh.

[From the Medico-Chirurgical Journal and Review, for April, 1818.]

AT a time like the present, when the hue and cry of prejudice is revived, in several populous districts, against the immortal discovery of the immortal Jenner, and when the columns of our public prints are filled with libels against vaccination, emanating from persons, who, though they cannot reason, and cannot pretend to any knowledge of physic, physiology, or therapeutics, to qualify them for such a delicate task, nevertheless discuss the question of the anti-variolous power of the vaccine lymph with the utmost impetuosity, not to say indecorum of language, and decide against it with all the plenitude of confidence inseparable from arrogant ignorance, it gives us more than ordinary pleasure to introduce these two Treatises



to the acquaintance of our readers. They are the production of men of well known talents; inured, moreover, to habits of investigation as well as of ratiocination, and qualified by their knowledge, both special and collateral, to execute the task undertaken; and though they may fall short of silencing, far less of convincing, the

“—————Pharmacopolæ,  
Mendici, mimæ, balatrone, hoc genus omne;”

we mean, the reptile tribe of practice hunters, whether fluttering or creeping; the needy pamphleteers; wonder-mongers; and speech makers, each after his kind; who set themselves in opposition to vaccination either from lack of wit or from lack of money, and who, Heaven knows! are too far gone for argument; yet on all that is venerable and respectable in our community for rank, intellect, or influence, we anticipate that they will produce a most solid and indelible impression in favour of the efficacy of this most brilliant discovery; a discovery, which, in the eyes of posterity, will give greater eclat to this, our age, than the late tremendous conflicts of contending armies; the wondrous rise or fall of dynasties; or the upraising or upsetting of thrones.

Mr. Moore's is indeed an admirable work; judiciously planned, and ably executed; and will be perused by readers both in and out of the profession, with equal gratification, equal delight. Seldom, of a truth, does it fall to our lot, in these our analytical labours, to meet a book which we have been able to go through with so much unmingled pleasure, or rather gaiety. With much good sense and valuable practical information, there are conjoined much playful satire, which, nevertheless, scorches pretty severely; (a thing not to be regretted, considering *where* it lights), and some unexpected flashes of sly humour, which every now and then surprised us into a smile. Indeed, we are convinced, that a very respectable remnant of his father's *mantle* has descended in hereditary succession to our author; and it is paying the latter no common compliment, when we tell him, that we had not gone far into his volume, ere we recognized some traits of the writer of “Medical



Sketches;"\* and that we did not finish it, without being more than once reminded of that happiness of expression, and facility of style, that unobtrusive humour, poignant without coarseness, and chaste without tameness; that shrewdness of observation, which was refined and ennobled by the spirit of philosophy, till it became no longer *mere* shrewdness; and that unaffected taste for the polish and the graces of society, combined with a pure relish for the charities and the simplicities of human life, which constituted Dr. John Moore one of the most pleasing of writers, and one of the most amiable of men.

Real, therefore, as is our regard for our author, candour obliges us to say, that we are not sure but our feelings in his favour are somewhat heightened by our own latent associations, and by those crowding recollections which are indissolubly connected with the name he has the honour to bear. Notwithstanding, we are equally free to confess our belief, that the native proper strength of the sapling will sufficiently support it without any aid from, or reference to, the parent oak; and that, on the present occasion, the decision of impartial criticism will be, that Mr. James Moore has produced a book at once sensible, useful, and amusing; so much so, indeed, that while it may be taken up as light reading, from its airy and jocular tone,—the frequent appearance of deep reflection and manly argumentation, will prevent the easy familiarity of the writer from arousing any thing like contempt in the reader. For our own parts, we are no great advocates for the intermixture of fun and physic; yet, when it is discreetly done, as in the present case, it becomes so *piquante*, that

"Not to laugh were want of goodness or of grace,"

and would argue in us more than even critical sourness and solemnity.

We must now hasten to lay before our readers the more prominent information contained in this interesting volume: The notice of Dr. Dewar's Tract will come in more appropriately towards the close of the article.

\* By John Moore, M. D. author of *Zeluco*, &c. &c.

The 1st chapter, entitled the "Discovery," contains some interesting biographical notices of Dr. Jenner, with an account of the tone of his mind, his early addiction to natural history, and his friendship with sir Joseph Banks and Mr. John Hunter: by the latter, indeed, he was solicited to become a partner in business; but well was it for the world, that accidental and family reasons induced him to decline this flattering offer, as it would, if accepted, have lost him those imperishable laurels which he afterwards gathered in the shades of Gloucestershire.

Having settled as a surgeon at Berkley, he commenced an inquiry about the cow-pox, which the popular belief of the county gave out as being an occasional preventive of the small-pox. After incredible difficulties, which would have proved, with ordinary minds, a barrier to all further investigation, he at last acquired a discriminating knowledge of the peculiar genuine vaccine disease, as observed on the teats of cows, or the fingers of the milk maids accidentally infected with it; and from one of the vesicles in the latter situation, he inoculated a boy, named Phipps. It may be interesting hereafter, as a chronological fact, to know that this important experiment took place on the 14th of May, 1796; and such have been the results of what was done on that day, in an obscure country hamlet, that at this moment the discovery is gone abroad over the whole inhabited world, and the name of Jenner, or, (in strange tongues), a sound imitating his name, is now articulated through the world by every "kindred, and tongue, and nation,"

"Familiar in their mouths as household words."

We gladly pass over the two succeeding chapters, which give an account of the first promulgation of Dr. Jenner's discovery, and the obloquy, the disingenuousness, the calumny, and the controversy, with which it was received, as well by its early proselytes, as its staunch opposers. The author gives a very animated *catalogue raisonné* of the various tempestuous pamphlets which were showered from the press by *Mosely*, *Birch*, *Rowley*, and others, in the insanity of their vain oppo-



sition; and refutes with much clearness, the arguments, if arguments they can be called which arguments were not, they employed to throw terror and prejudice into the minds of the lower classes against vaccination. We shall transcribe his concluding paragraph, which may be regarded as the summing up of his lengthened reasonings against these furious alarmists.

"Whether the lymph was taken from a cow, or from the human subject, the malady produced is simply the vaccine; and respectable observers have never detected any other effect from vaccination. There are not even those grounds of suspicion which are attached to variolous inoculation; for the vaccine process is so gentle, as neither to enfeeble the habit, nor to rouse into action any indisposition which may be lurking in the constitution; and its influence is so transient, that in a very few days even delicate infants recover their pristine health." P. 66.

The 4th chapter treats of small-pox occurring after vaccination; and of small-pox and several other infectious diseases, in some instances, recurring to the same individuals. This is a most valuable portion of the work; and besides abounding in deep, independent, and original ideas about disease in general, it will, we think, prove highly interesting to an intelligent reader, from the train of useful reflection in his own mind, which Mr. Moore's casual and aphoristic hints about obscure points of physiology, pathology and therapeia, must infallibly awake and set in motion. We extract the following specimen of his reasoning, regretting that our limits will not permit us to do it ampler justice.

"It has been observed, that there are certain maladies which are apt to afflict the same persons repeatedly; and the oftener they have taken place, the more prone they are to recur. Gout, rheumatism, catarrh, and ophthalmia, are of this kind. Yet, notwithstanding the general truth of this position, there are some persons who have had one attack of these maladies, and through a long life have never had a second.

"To contrast with this, there is another class of diseases which mankind in general are susceptible of contracting only



once. But each of these diseases have (has) assailed some individuals more than once; except one, whose first attack is supposed to be always mortal.

" Diseases of this second class are all produced by morbid poisons, either in a liquid or gaseous form; and are certainly of a less ancient origin than those distempers which are excited by cold, heat, moisture, surfeits, want, marshy vapours, and other causes, whose existence has been co-eval with the world.

" The most terrible of the morbid poisons is the saliva of a dog affected with hydrophobia. Whenever this deleterious fluid has been deposited in a wound, and has begun to stimulate the living fibre, the human powers are quite inadequate to expel, or to resist it: and as no remedy has been found out capable of controlling its violence, the disease continues until the vital powers are extinguished.

" The syphilitic poison is also superior to the medical powers of Nature, and would be as fatal as the hydrophobia, if an antidote had not fortunately been discovered to counteract its virulence. But as this disease can only be cured by the operation of medicine, and not by the natural actions of the body, as soon as the influence of the medicine has ceased, the body again becomes susceptible of the disease; and this malady may be contracted again and again by repeated applications of the contagion.

" The other morbid poisons, the plague, small-pox, chicken-pox, measles, hooping-cough, mumps, the scarlet, and perhaps some other fevers, are all distinct infections, yet regulated by similar laws. When a man in health contracts, for the first time, any of those infections, he is seized at a regular period with the peculiar symptoms of the malady; and there is formed in the contaminated body abundance of infectious vapour, which evaporates from his person. The disease sometimes proceeds in a tranquil, and at other times in a most tumultuous course. But if its progress is not interrupted by death, after it has reached to a certain height, and when infection is steaming from every pore, the symptoms meliorate, the production of the morbid matter declines and stops; that which

was formed is eliminated; the body becomes insensible to the poison, and gradually resumes a state of health.

" Unless this alteration in the body took place, all these maladies would be mortal in every instance; for there is no specific for any of them known.

" The old physicians, either from reluctance to acknowledge their incapacity of accounting for these favourable events, or from a facility of admitting mysterious words as adequate causes, imputed the whole to the medical powers of Nature. This continues, to the present times, a favourite phrase, and is even sometimes styled a Doctrine. But whatever produces that insensibility to the stimulus of these poisons, which is acquired in the progress of these diseases, the altered state of body usually continues through the remainder of life. Individuals, therefore, who survive one attack of these distempers, commonly resist the infection ever afterwards. This general maxim, however, like all others, has its exceptions. It is universally admitted, that the plague has frequently attacked the same persons repeatedly; and that the hooping-cough, mumps, and scarlet fever have sometimes seized the same individuals oftener than once, is rarely denied. But the recurrence of the measles has been disputed. This scepticism, however, is not certainly to be found in the very early writers, most of whom admit the occasional exception; and the evidence of later times is quite decisive. Richard Morton saw one case where the measles occurred twice; Professor De Haen (*Ratio Medendi de Haen*) attended two patients of the same kind; and Burserius (*Instit. Med. Pract. Burser. tom. 2*) has collected a number of examples, from unquestionable authority, where the measles took place twice. In addition to which, Dr. Baillie, a physician of the most clear and unbiassed judgment, lately observed, and distinctly described \* eight examples of this incident; since which, this question seems to be considered as settled.

" That the small-pox was also governed by the same gene-

\* Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. iii.



ral rules was never doubted, until variolous inoculation and vaccination became subjects of medical feuds. But the friends of inoculation in the middle of the last century, and the enemies of vaccination of the present day, have ventured to deny that small-pox ever had attacked the same persons twice; which denials are in opposition to recorded affirmations from the highest authorities. The profession, indeed, of late, has been excited to a close consideration of these points; and a multitude of examples has been published of small-pox having seized certain persons twice; which facts are so common, as no longer to excite particular attention." P. 71—74.

Our author is also of opinion, that though the effects of the vaccine virus upon the living body are far less virulent, still that they are regulated by the same general principles as the small-pox and all other morbid poisons. In fact, he argues, and with much probability, for such a radical resemblance between the two, that the vaccine lymph and variolous pus maintain a reciprocal control over the actions of each other; hence he concludes, that the former will never fail to prevent the small-pox, except in those very rare and peculiar habits which are susceptible of contracting the small-pox oftener than once.

Now, though his reasoning is ingenious, we fear that his premises are faulty, or that he has over-looked something in this difficult discussion; for it does appear to us, either that his conclusion is rather premature, or else that those peculiar habits, susceptible of second attacks of small-pox, are not so rare as he represents them. We admit, that the alleged are far more numerous than the actual failures of vaccination; that ambiguous eruptions, or severe cases of chicken-pox, occurring after cow-pox inoculation, are eagerly caught at, and sounded abroad, by the ignorant and the interested, as proofs of the inadequacy of the preventive: we can allow, also, full force to the fact he states, that out of 2,671,662 persons in France, who had been properly vaccinated, only seven had afterwards taken the small-pox; nay, we can add another strong fact, of which we have been credibly informed, viz. that in *Amsterdam*, out of a population of 200,000 souls, such has



been the generality of the success of vaccination, that, during the first part of the past year, not an individual case of variola has appeared:—but what shall be said to Dr. Dewar, who brings forward 54 cases of small-pox (visited by him in the town and neighbourhood of Cupar) occurring after the subjects had gone through the vaccine disease? Only ten of these, it is true, were inoculated by medical practitioners; but Dr. D. found no particular reason for disputing the genuineness of the vaccine disease which the other 44 patients had undergone. It appeared to him, that the disease, in this particular epidemic, attacked indiscriminately the vaccinated and unvaccinated; and although, in the former, it was generally milder, and the secondary fever often absent, still it was not always so; for some of them, those too who had been vaccinated under the superintendence of medical men, had the disease in a form of great severity. From all he saw, Dr. Dewar is of opinion, that

“It is evident vaccination did not ultimately prove a certain preventive of an attack of small-pox; yet it evidently gave, in some instances, a remarkable temporary or occasional protection. On this point we have still much to learn; and, in the mean time, must remain content with the general conclusion, that vaccination gives a probable, but not a certain, protection from an attack of small-pox; and in this respect it must even be admitted, that we find a marked distinction between it and the variolous inoculation.” P. 32—33.

These things we recommend to the consideration of Mr. Moore: for our own parts, satisfied as we are of the general preventive power of vaccination, we leave the occult causes which produce occasional failures to be developed by time; for in the present state of our knowledge we have as yet too few facts.

The author's fifth chapter is on the subject of varicella or chicken-pox; and he evinces very considerable learning and research in tracing the notices and descriptions of it that are to be found in the early writers, both Arabian and European. He also enters at great length into the diagnosis between this disease and the genuine small-pox; but it is a difficult subject,

and it is scarcely any discredit to him when we say he has failed of being clear. Verbal descriptions, though ever so accurate, can seldom teach what can only be rightly known by actual and careful inspection. No doubt, when each of these two diseases appear in its proper colours, the distinction is sufficiently apparent; but when small-pox is peculiarly mild, and chicken-pox extraordinarily violent, which is sometimes the case, then all the discriminating marks are obscured. The perplexity is increased, too, by our knowledge of the fact, that a new kind of small-pox, different from the mild species, has lately been observed in persons who had previously undergone vaccination; and that this malady neither proceeds according to the regular course of small-pox nor chicken-pox, but appears like a new and intermediate eruption.

We regret that our limits compel us entirely to pass over the chapters describing the reception of vaccination with the public in England—the parliamentary proceedings with regard to the remuneration bestowed on Dr. Jenner—the gradual establishment of vaccine institutions—the extension of the blissful discovery, and its consequent benefits through Scotland, Ireland, and all the British dominions and dependencies in the East and in the West—and its ultimate diffusion through Germany, Prussia, Russia, Sweden, Denmark, France, Switzerland, Italy, Spain, Persia, Africa, and America. This part of the work contains much curious and amusing matter; but, as it is less immediately connected with medical science, we must pass at once to the concluding chapter of this valuable volume, which has for its subject the right mode of performing vaccination.

Owing to the irritability of new-born infants, and the uncertainty of their organization being perfect, our author thinks the operation of inoculating with the vaccine lymph should be deferred till three weeks after birth; but should small-pox contagion be raging in the neighbourhood, the operation should be performed earlier, *coute qui coute*, for the danger of it is little, compared with the danger of infection.

The only thing material with regard to this operation is, to ascertain that the vesicle has not acted locally, but effected the



desired change on the constitution; this is a matter of great importance, and has attracted to it, from practitioners, an adequate degree of attention. Hence has originated the practice of testing, first set on foot by Mr. Pearson of London, and Mr. Bryce of Edinburgh, who simultaneously, but without any knowledge of what was doing by each other, proposed to try the effect of re-vaccination, during every period of the progress of the vaccine vesicle.

We are inclined to think that this practice was suggested by what was usually done, in the last age, by practitioners who inoculated for the small-pox. They were wont to make a puncture every day, until the constitutional affection appeared, and were always much surprised to find, that, when this wished-for affection *did* appear, all the successive punctures became ripe at the same time. Mr. Bryce, therefore, punctured the first vesicle on the fifth or seventh day, took lymph from it, and made a second puncture on a part of the body different from the former. If the first had taken proper effect, the second resembled it in miniature, was accelerated by it, got ripe at the same time, and both desiccated together. If it had not, the second healed without any such effects.

Mr. Dunning, of Plymouth, first pointed out the danger of puncturing and draining a vesicle of its lymph, as he conceived such practice left the patient, if originally of a high variolous susceptibility, still liable to be infected with the small-pox; and our author coincides with him in opinion, as the following quotation will better show:

"In vaccination, the governing principle, which ought always to influence the surgeon, is to infect his patient most thoroughly with the virus. Little is to be feared from any excess of the vaccine fever; but an imperfect constitutional infection may produce a false security, and may diminish or frustrate the benefit expected from the operation. When three or more vesicles have been excited, lymph may be taken from this subject. But it is prudent always to leave two complete vesicles to pass through their course untouched." P. 290—1.

Mr. Moore seems, therefore, to lay very little stress on Mr.



Bryce's test; while Dr. Dewar, on the other hand, thinks it ought to be invariably practised:

"Who shall decide," &c.

For our parts, we cordially agree with the latter gentleman, because we think the *test* rests on a philosophical principle, and has, moreover, been sealed by experience. All objections will be removed, if three punctures are made originally on different parts of the body, and the lymph for testing be taken from this third vesicle, leaving the others to go through their course unpunctured and unmolested.

The manner of performing this little operation is so well known to every body, that we extract the following quotation (and it shall be the last), not for the sake of the caveat it conveys, but merely as a specimen of the serio-ludicrous tone which so frequently appears throughout the volume.

"The prudent will not only avoid the perils proceeding from negligence and cold indifference, but will also eschew the practice of a most zealous clergyman of the Methodist persuasion, whom I once saw operate.

"This worthy man grasped his lancet firmly, but not after the fashion of surgeons. He continued alternately taking lymph from one infant, inserting it into another, and expounding his doctrine. A moment's pause occurring in his discourse, I seized the opportunity, and, to stop a work of super-vaccination, asked, 'how many punctures he deemed necessary?' He proceeded with fluency, 'So innocent is the lymph, so transitory its workings, and so lasting its effects, that, be assured, you cannot pour too much into the flesh.'—In pronouncing these words, he impressed the epithets on his hearers with an elevation of the voice, and on the child with a depression of the lancet, who shrieked at each gesticulation. Yet the mother, who would have been infuriate had a surgeon extorted such screams, looked quite placidly at her revered pastor; being inwardly convinced, that all the pains taken and given by him, would, in some mysterious way, do good to her suckling.—As surgeons cannot expect to meet with the same indulgence, they are recommended to be more merciful in their mode of operating." P. 292.

Here we must close our analysis of these two treatises. Of Mr. Moore's we have sufficiently spoken;—yet few readers of taste will be content, we presume, with our meagre extracts, when the original work itself is to be had. It must be eminently serviceable to the cause of vaccination in times like these, when prejudice and misrepresentation are abroad. Dr. Dewar's little tract, also, will not be without its weight, inasmuch as it is written with the view of preventing the forging of some rumours, and the gross exaggeration of some facts and occurrences which were likely to arise from what he had witnessed; and of holding forth "the favourable features of vaccination which remain unaffected." He is a gentleman of great talents, united with great industry, and, from his addiction to the "*musæ severiores*," is well qualified for any intricate philosophical investigation, where a union of acuteness and cautiousness are requisite.

May we be permitted to hope, that truth will at last triumph; that vaccination will at last prevail; and that future generations will only be traditionally acquainted with a disease which was wont to sweep off one tenth of the human race—a disease to which the touching language of a modern classic might, a few years back, have been well applied: "*Pauci sunt quibus cognati, familiares, aut amici, hac febre abrepti, non sunt lugendi. Misera hæc pestis, sæva, atrox, et insensibilis, teneros et amabiles depascens, cæde et luctu patriam implet.*"\*

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*Cases in Surgery. Part II. Of Diseased Prepuce and Scrotum; illustrated with Etchings.* By WILLIAM WADD, Esq. Surgeon Extraordinary to his Royal Highness the Prince Regent. 4to.

[From the London Medical and Physical Journal for April, 1818.]

WE are much pleased at the sight of another Number from this accurate physiologist, and hope that the custom of etching will be more generally adopted by surgeons who only can judge of the importance of attending to the minuter parts.

\* Gregory, *De Morbis Cæli mutatione medendis*, p. 42.



The present plates very much surpass the former in softness and technical finish, though they cannot in correctness. They are twelve in number: we shall give a short account of each. The first contains three forms of diseased prepuce, boldly and correctly delineated. The introduction, part of which we shall transcribe, will show the intention of the author.

"Probably the use of the prepuce is to protect the delicate thin skin of the glans in animals who have no artificial clothing, and, of course, in man in his savage state. That it is not necessary for the purposes of the organ of which it makes a part, is evident by the variety in its natural figure, and by the frequency of circumcision. On this account, any impediment it may offer to the natural functions ought to be speedily removed.

"But, however unimportant this covering of the glans penis, or præputium, may seem, it is frequently, from malformation or disease, the cause of much inconvenience to the functions of that organ, and sometimes of very serious impediment to the ordinary functions of the bladder.

"In a work, therefore, intended to represent most of the diseases which may be relieved by the surgeon, those of the prepuce naturally fall under this division.

"Turner, though he includes the diseases of the prepuce among those of the skin, found it necessary to devote a chapter to two complaints peculiar to this part; namely,—*Phymosis* and *Paraphymosis*.

"Phymosis is a contraction of the orifice of the prepuce, which prevents its being retracted or withdrawn, in the manner before described. It is sometimes congenital; and the inconvenience arising from it is now so well understood, that the difficulty of voiding the urine, occasioned by this state of the parts, is generally remedied by operation, before the patient attains the age of puberty. Where this has been neglected, diseases of the urethra and bladder have been the consequence.

"Paraphymosis is a condition of the prepuce, in which it is already retracted, but cannot be returned to its original form.



In this case it produces the effect of a ligature round the basis of the glans, and is, on that account, by some called *Periphymosis*.

"When the phymosis is complete, no part of the glans, nor even the orifice of the urethra, can be discovered. This occurs sometimes in advanced age, apparently from a gradual shrinking of the penis; after which, the projecting orifice of the prepuce contracts to such a degree as to hinder the water from passing, even after it has escaped from the urethra. Hence, the whole cavity of the prepuce becomes filled with urine; a small quantity of which, constantly covering the glans, deposits a calculous crust, assuming the figure of that part.

"When the prepuce is thin, a division of the part with a phymosis knife, or curved bistoury, generally gives relief. When the prepuce is thicker, some have proposed an operation similar to that for the hare-lip, in order to obviate the deformity, from a separation of the two laminæ of the skin: but, as the part is not exposed to view, this appears unnecessary.

"Others prefer circumcision; compressing as much of the prepuce as is necessary within the blades of the forceps, and cutting it off with one stroke of the knife. In hot climates, where the inhabitants are most exposed to the inconvenience of morbid secretions from this part, Christians, as well as Jews, submit to this operation, according to an observation of Guido de Cauliaco,—*'Propterea quod non congregantur sordities in radis balani et calefacerent ipsum.'*

"Fallopious proposes a gradual dilatation, without any incision; which, in some cases, may succeed.

"When phymosis has existed a long time, adhesions take place between the glans and the prepuce, which cannot always be separated.

"Sometimes, if the pus formed between the prepuce and glans cannot escape by the orifice, ulceration takes place through the prepuce, by which the glans protrudes, and the lower part of the prepuce is thrown to one side, resembling the figure of a glove, open at its extremity.

"The congenital phymosis in children sometimes goes off

in adult age, the prepuce enlarging in greater proportion than the glans. An operation should not, therefore, be advised, unless other circumstances require it; though, to judge by my own experience, this natural cure of the constriction is of rare occurrence."

Two plates follow, showing the effects of phymosis on the urethra. Four specimens of disease in that membrane are given, where the general history affords no other probable cause than long continued resistance to its expulsatory power. The upper portion of urethra in plate II. is a fungus, which in former times would have been denominated a caruncle. The lower portion exhibits a membranous band across the urethra, behind which is an oval ulceration. In many parts of these urethrae were appearances of disease and inflammation, which, not producing alteration in the form and figure of the part, cannot be delineated by the pencil.

The two succeeding plates represent the state of the foreskin, where urine, each time it was voided, filling the cavity, and partly resting on the glans, gradually induced a deposition of calculous matter on that organ. The natural opening was obliterated by inflammation, and the urine could only escape with difficulty through ulcerations on the side and under part. Here circumcision was necessary; and, when performed, exposed a margin of fungus and calculous incrustation: the latter was easily removed, and the fungus afterwards by the application of caustic.

The sixth plate gives a representation of the effects of an abscess between the two layers of the prepuce, with suitable remarks.

The seventh is an etching of a cancerous prepuce. Of this the author speaks with some caution; and, as the subject has been so recently before us, we shall do him the credit to show, by the following extract, that he, at least, is not among the number of those who are unmindful of their predecessors.

"Here were many of the characteristics of carcinoma. A sordid, sanious, fetid discharge. The erosions betwixt the fungi bled from time to time, and the serrated, indurated, re-torted edge, presented the external marks of cancer.



"Many apparently trifling diseases of these parts, whether arising from mal-formation or want of cleanliness, derive their importance from their situation. Of this class are herpetic affections of the skin, and ulceration from the lodgements of the mucous secretion between the contracted prepuce and the penis. These, when remarked with sufficient accuracy, may be always distinguished from syphilis. It is not so easy to describe them by an appropriate character. Till Mr. Hunter's time, there was no difficulty, because they were all called venereal. A celebrated French author said formerly,—'On peut assurer que quand trente mille hommes combattent en bataille rangée contre des troupes égales en nombre, il y a environ Vingt mille Vérolés de chaque côté;'—but *grande verole*, *lues*, and *pox*, are now obsolete terms. Writers have been ashamed to confound what Mr. Hunter separated with so much accuracy; and, by slow degrees, the true venereal ulcer has been tolerably well ascertained. But a new language has been introduced, and threatens to confound all other distinctions. We had long been accustomed to the word *proteiform*, which proved a most convenient salvo, till Mr. Hunter showed the uniformity of nature in this as in all other causes and effects. Pseudo-syphilis now removes us a single step, and no more, in our labyrinth; but, what is much worse, it proves an apology for resting, instead of proceeding and marking our way. Mr. Hunter, though he gave no names to the other numerous complaints of this organ, yet described them with accuracy, so that, when we meet with them, we recognise what we have seen in his writings. If we are still at a loss for names, there is reason to believe most of them may be found in Celsus: see his chapter, *De obscenarum partium vitiiis*. Such is not, however, the case with the two following.

The plate to which the close of the foregoing extract refers, gives a representation of the enlarged prepuce, so common in the West-India islands, particularly in Barbadoes, as to be almost endemic. This, as the author observes, is, by the moderns, termed elephantiasis, when seated in the foot and leg. The other remarks are very judicious, and the references to the best authors not less copious. To render the illustrations



more perspicuous, this case is followed by a figure of the penis under the elephantiasis of Aretæus, in which that organ appears somewhat retracted within the pubes, which is free from hair, and the prepuce appears elongated by the retraction and, probably, wasting of the glans within it.

"Aretæus (observes Mr. Wadd) is allowed to be the first author who notices this disease, and his description has been copied by every subsequent writer, till our own days. For the most part, it is admitted to be correct. If it is deficient in the parts under consideration, it should be remembered, that the author acknowledges his fear of contagion, which probably prevented his closer examination: nor is it unlikely that, when he speaks of the salaciousness of these unhappy creatures, he only relates a vulgar error.

"A case of this kind lately occurred in St. Bartholomew's Hospital, and is related in the *Medico-Chirurgical Transactions*, vol. vi. I did not see it, but the following is the description given by Mr. Lawrence:—"Not only had the development of the generative organs been arrested from the time when the disease broke out, but they had actually undergone diminution and decay. The scrotum was shrivelled, and seemed empty; the testes could with difficulty be felt; they were soft, and about the size of small horse-beans."

The present number introduces the *Affections of the Scrotum*, and closes with two most interesting plates of a disease, we believe, not before accurately represented on paper, and at present particularly requiring the attention of the faculty, on account of parliamentary enquiry. This is the chimney-sweepers' cancer, of which four representations are given in its different forms. We cannot admit space to enlarge on the author's pathology of the disease, which is to us not less satisfactory than perspicuous.

Such are the contents of this number, of which, by several hints interspersed, we expect a continued series. We sincerely hope Mr. Wadd will improve the leisure of the succeeding summers, as he has done the last. During the winter (to speak professionally) he is probably much better employed.

## ORIGINAL PAPERS.

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 FOR THE ECLECTIC REPERTORY.
*Case of Extra-Uterine Fætus.\** By JOHN BARD, M. D.

New York, January 17, 1799.

DEAR SIR,

A CASE has lately fallen under my care, which, from its singularity, I cannot help communicating to you. The wife of one Mr. Stag of this city, a woman of about twenty-eight years of age, after having one child, with whom she had a good time, was a second time taken with the common symptoms of pregnancy. At the end of nine months (though she had found her symptoms different from what she had observed before, being more disordered, frequently feverish, the swelling of her belly not so equal, and the life and motion of the fætus more feeble and faint,) she expected her delivery, and had some pains of labour, which, however, went off, and the swelling of her belly sensibly lessened. She was soon after taken with a regular return of her menses, which continued five months, during which time there remained a large, hard, insensible, and moveable tumour on the right side of her belly. Under these circumstances she was taken a second time with the usual symptoms of pregnancy, and during the whole nine months' progress of it she had her health better, and her swelling grew more equal and regular than before; and at the end of the nine months, after a short and easy labour, was delivered of a fine healthy infant. The swelling which attended her, however, before this second pregnancy, still remained unaltered, and five days after her labour she was seized with a putrid fever, a purging, suppression of the lochiæ, and profuse putrid sweats,

\* This paper *may* have been published; but we have received the original communication and insert it accordingly.—EDITORS.



and brought into the greatest danger of death: at length, however, she got the better of most of these symptoms, but the loss of appetite, great weakness, and a continual slow fever, continued to attend her, till about six weeks after her delivery, when she complained of an inflammatory pain in the tumour in her belly, for which I ordered a fomentation and an emollient poultice, and soon after perceived a fluctuation of matter, which by degrees came forward, and had the appearance of the whole tumour's having suppurated. Under these appearances I desired Dr. Huck, the bearer of this letter, to visit the patient with me, and be present at my opening this vast imposthumation, which, from the whole history of it, we were both of opinion would turn out an extra-uterine conception; which indeed it proved. I made an incision, the first morning, about six inches long, which discharged near a quart of matter very fœtid. The woman fainting, was put to bed. The next morning, upon introducing my fingers into the incision and conducting them towards the right side, I found an opening through the muscles about the bigness of a dollar, and plainly perceived the parts of a fœtus; upon which, I immediately lengthened the opening four or five inches further, in a slanting direction, which exposed the cavity wholly to us: we then found it necessary to extend the opening through the muscles into the sac where the infant lay, two or three inches, through which I extracted an infant, as large as is commonly met with at the end of nine months, in the ordinary course of nature, with all its parts entire, even the skin, except the first joints of the fingers of one hand and the bones of the cranium, and the placenta and umbilical cord which were dissolved. Upon extracting this fœtus there followed a large discharge of matter and putrified blood, as frequently happens from the matrix upon natural deliveries. For many days there was a vast discharge from this cavity, which by degrees grew less and less offensive; and the fever that this poor woman was afflicted with, which before this delivery resembled very much a putrid hectic, has since gradually abated, upon the use of the bark with elixir of vitriol and a balsamic diet. It is now about four weeks since the operation, and the parts are amazingly con-



tracted, the discharge is perfectly sweet and of a good consistence; granulations of new flesh appear upon the external wound; her fever has left her; her appetite and sleep are restored, and she sits up and has all promising appearances of recovery. It proves, from all the symptoms, situation, and appearance of the case, that the formation of this fœtus has been in the right Fallopian tube. I should be glad to have your opinion in this particular, as well as the case in general.

I had occasion to mention Dr. Huck; he is a gentleman who is here in the character of physician to the army, and goes to Philadelphia to attend General Forbes. His abilities in his profession, and his character and manners as a gentleman, are such as I am sure you will be pleased with.

My most affectionate regards wait on Mrs. Kearsley and your family,

And am, dear sir,

Your most obedient, humble servant,

JOHN BARD.

Doctor JOHN KEARSLEY, Philadelphia.

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FOR THE ECLECTIC REPERTORY.

*Uncommon Tumour of the Mamma.* By JOEL LEWIS, M. D.

EARLY in the month of May, 1815, Mrs. G. aged fifty-eight, applied to me for professional advice, and gave the following history of her case:

In June, 1806, six months previous to the cessation of the menses, she was exposed for seventy-two hours, in descending the Allegheny river in a small skiff, to a heavy and incessant rain, without any other covering than a blanket. From this time, she was afflicted with erratic pains, sometimes appearing to be rheumatic, and at other times to arise from wind in the bowels, for three years; when a small indurated gland was observed in the right mamma. This gradually increased till the summer of 1812, when it was as large as a pullet's egg, and discharged a bloody-coloured fluid from the nipple. From this moment, all morbid sensation was completely absorbed from

the other parts of the body and concentrated in the diseased breast. The pain there was constant, and a few days previous to the discharge, which was as regular in its monthly appearance as the menses had been, it was exceedingly severe, and of the lancinating and burning kind; accompanied with a stricture of the integuments, extending nearly across the anterior part of the thorax. The disease continued in this form, while the tumour was gradually increasing in size, till early in the autumn of 1814, when the discharge ceased. From this period, till within a few days of the operation, the pain was excruciating, and the tumour had an unusually rapid growth, attaining to nearly double its former size. Its colour was now of a dark leaden hue, and exhibited an alarming appearance. After mature deliberation, there appeared to me no other means of relieving my patient but by excision, which I strenuously advised. The operation was performed on the eighteenth day of May, in the presence of two physicians and several pupils. The tumour was extirpated in less than two minutes, and the dressings were completed in twelve minutes. We supposed that not more than a gill of blood was lost during the operation. For a few hours there was a considerable smarting of the wound; but afterwards she complained of no uneasiness whatever, and no unpleasant symptoms supervened. On the third day she sat at the table with her family, and on the sixteenth was discharged cured. She now attended to her domestic concerns, and declared herself to be in better health than she had been for many years previously. Four months have elapsed since the operation, and she continues perfectly well. The tumour weighed twelve ounces: it was then punctured, and six ounces of a fluid, perfectly menstrual, flowed out. A free incision was now made into the tumour, and presented to our view a large sac whose sides were nearly as thick as a cent, and in the bottom of which was situated a diseased gland of the size of a hickory nut. This gland was somewhat circular, but irregular in its form and ragged about the edges. It was evident that this morbid gland originated the disease; and the sac increased with the quantity of the secretion until it reached the size above mentioned. The secretion was put into



a phial and kept for several days, during which time it was submitted to the inspection and examination of several medical friends, who coincided with me in the opinion that it was unquestionably the menstrual fluid.

## REMARKS.

This is the only instance within my recollection, on medical record, of vicarious *menstrual secretion*. There are many instances of vicarious hæmorrhages from the nose, the lungs, the nipple, the hæmorrhoidal veins, the stomach, the bowels, and even the gums. The advocates for the sanguineous nature of the menstrual discharge, place much reliance upon this fact. To prove the futility of such reasoning, it is only necessary to state that this is a favourite mode by which nature relieves the system of the morbid irritability, sensibility and repletion, consequent to the suppression of any important secretion, or any customary discharge, which becomes important from habit. A scirrhus liver, or spleen, or pancreas, the too sudden checking of an habitual alvine discharge, and the healing of old ulcers, have all been the cause of hæmorrhage. But what visionary speculator could believe that these discharges, although clearly vicarious, are discharges of bile, of pancreatic juice, of alvine secretion and excretion, or of purulent matter, in their respective cases? Such a belief would not be more absurd and ridiculous, than that of those physiologists who declare the menses to be a sanguineous discharge, because, in obstructed menstruation, hæmorrhages are occasionally vicarious. In the case of Mrs. G. we have an indubitable instance of vicarious secretion. The discharge was as regular as her menstruation had been; was precisely similar in its appearance and in its being incoagulable, and its elaboration was effected by a glandular apparatus. Like menstruation, this discharge varied in duration and quantity. The same symptoms of nervous irritation which precede menstruation also preceded this discharge. The stricture of the integuments extending nearly across the exterior part of the thorax, the lancinating pains, the heat of the parts, the chorded sensation emitted to the fingers on pressure, the depression of spirits, and the languor of body, are abundant



testimony of the increased action, irritability and sensibility of the part, all of which were essentially necessary to the elaboration of this fluid. The importance of this function is further proven, by the constant and powerful efforts of nature, for so long a time, to establish it, and by its completely relieving all the nervous symptoms with which she had been previously afflicted. In the autumn of 1814 this function became obstructed, and her former complaints returned with increased violence. Small and frequent hæmorrhages from the nose, mitigated, in a slight degree, her sufferings, till their final removal by the operation.

JOEL LEWIS, M. D.

*Pittsburgh.*

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*On Ovarian Disease and Abdominal Steatoma.* By THOMAS HENDERSON, M. D. of Georgetown, Recording Secretary of the Medical Society of the District of Columbia.

Read before the Society at the Stated Meeting in July, 1818.

ABOUT the first of October, 1816, I was desired to see negro woman Peggy, who had been complaining for some months occasionally, and now was ill. She was about eighteen years of age, was raised in the immediate service of her mistress, had been treated with great kindness, was considered as a healthy servant, and married about eighteen months since. She conceived immediately, and about ten months after marriage brought forth a healthy child. She was well during the month, and came out as usual, but soon manifested symptoms of loss of health; frequently complained; became weaker and drooping; she lost her flesh and spirits. Her change of health was attributed to her change of lodging; for, being accustomed previous to her marriage to sleep in her mistress's close chamber, she slept in, comparatively speaking, a very open cabin. Her debilitated state did not affect her lactation; she was an abundant nurse, and her child was healthy and thriving.

A few days before I saw her, she was seized with a chill, which was succeeded, as she informed me, by a very high fever, pain in her right side, cough dry and constant, pain in her head, costive bowels. These symptoms continued severe when I was called in, and in addition her pulse was 130, tense, not full but strong; her tongue was white, skin not very hot, great dyspnœa; this last so distressing as to prevent the horizontal posture at night. In short she had every symptom of violent pleuritis vera. The symptoms continuing and increasing, for six or eight days, the most active practice was pursued. She was bled every evening for four days, took *Ol. Ricin.* and antimonials; was blistered largely; had mucilaginous drinks and expectorant mixtures and inhalations of steam, with suitable diet. All which, together with a bleeding on the sixth and eighth days, reduced the force and tension of the pulse, relieved the pain in the side, produced a lax state of the bowels, rendered the cough loose, removed in a considerable degree the dyspnœa, and softened her skin. I saw her occasionally and believed her convalescent.

The pulse continuing at 118 in the morning and 120 to 130 in the evening, the cough remaining troublesome, the dyspnœa still preventing rest in the horizontal posture, gave me reason to apprehend some effusion in the cavity of the thorax, and I accordingly ordered *Tinct. Digital.* in doses through the day, and opiates at night. She continued in this state, improving somewhat for several days, when the pain in the side returned, and after venesection I ordered a blister to be applied to the right side. It was applied, and in dressing it, the nurse's hand slipped towards the umbilicus, and a tumour was discovered, to which my attention was called the ensuing day.

My astonishment can scarcely be imagined, on discovering a monstrous tumour, occupying the hypogastric, the umbilical, the iliac, the lower part of the hypochondriac and epigastric regions, very prominent, tense, not at all painful, immoveably adhering on all sides. And it is very remarkable, that the mother, who had constantly slept in the same room, who nursed and assisted her during her long illness, and who was incessant and anxious in her devotion to her child, declared to



me she was perfectly ignorant of the existence of the tumour, until the attendant discovered it in the manner above mentioned. On enquiring of her husband, he knew of it; and the midwife who had delivered her nine months before, informed me that she then had a tumour, to use her own expression, "as big as her fist." The direct cause of the obstinacy of the cough, dyspnœa and irritation of the pulse, was sufficiently evident; and probably the predisposing cause of the pneumonic inflammation under which Peggy laboured, may be referred to the tumour, which, from its pressure on the diaphragm, may have contributed to render the pleurisy so violent and dangerous.

On enquiry, I discovered, that about five months before the birth of her child, which was born in February, 1816, she felt a lump in the right side of her belly low down; that is, in September, 1815, in the fourth month of pregnancy she observed it, and from her account the place where she discovered it was near the anterior superior spinous process of the ilium, and then it was as large as a hen's egg; that as pregnancy advanced, the tumour grew very slowly, and was, by the evolution of the womb, thrown in front of the belly at the lower part, viz. just above the symphysis pubis; that it caused her no pain, that it was moveable; that at the time of delivery it was as big as a man's fist; that a few weeks after the birth of the child it commenced its increase, and in fourteen months from its discovery the tumour had reached the bulk and occupied the space I have above stated.

The case was extraordinary; it was dangerous, it was evidently tending to a fatal termination. I believed it to be a diseased ovarium. I was persuaded, that unless the tumour could be lessened, by an evacuation of its contents, death must be the consequence. The woman's frame was in constant irritation, chiefly from the pressure of the tumour on the organs of respiration; for the fecal and urinary evacuations were natural; and the violent attack of pleurisy had debilitated her so much, that I felt persuaded, from the state of the pulse, from its uncontrollable rapidity, that the action of the heart would



ere long be worn down. The appetite, with the exception of a few days, was tolerably good.

The situation and size of the tumour when first observed, its commencement during pregnancy, its appearance at the time of my seeing it; the freedom from pain, the certainty of its not being a disease of the uterus or bladder, induced me to believe that it was a disease of the ovarium. I have said, from its commencement during pregnancy; (at least from its size when first discovered and its gradual increase, I believe it took its rise at or soon subsequent to conception,) for I thought it not unreasonable to suppose that the excitement of the right ovarium at the period of conception, might at the same time have produced a genuine ovum, and a diseased action in the organ of the same side; or that the ovum might be formed in the left ovarium, and morbid excitement created in the right, the result of which morbid excitement was the tumour. I thought it further reasonable to entertain this view, from believing that the growth of the fœtus might have prevented the increase of the tumour, as the progress of pregnancy retards some other disorders. How far the change of situation, above alluded to, and the adhesion of the tumour, should have affected my opinion, I will not decide.

I need not occupy any time, in giving my reasons why I was positive as to the freedom of the uterus and bladder from disease.

I have said that relief was, in my opinion, solely to be obtained by an evacuation of the contents of the tumour. The absorption of the mass was not to be expected, either from a natural process, or from the power of the absorbents excited by remedies, or from the result of experience in similar cases. Therefore I determined on Paracentesis Tumoris. I called a consultation and my friend Dr. Cooke attended, and an examination as to the nature and probable contents of the tumour took place. We agreed in opinion as to the pathology of the tumour. Although no fluctuation could with any precision be decided on, yet we hoped to relieve our patient; for it may readily be conceived, that a sac may be so entirely and tensely distended with fluid as to deny any fluctuation, when examined

into with the view of ascertaining it, by percussion or otherwise. We were, however, prepared for a gelatinous state of contents.

The operation was fairly done by me; and, as we supposed probable, nothing was evacuated. As soon as the trocar entered the tumour, I felt its progress through the gelatinous mass and informed Dr. Cooke of it.

Not being disposed further to attempt the evacuation of the tumour, or its removal by excision, I reluctantly gave up all expectation of restoring my unfortunate patient to health. I informed the master of the woman, and directed only palliatives. The case went on, without any remarkable circumstances, for three weeks. I will only observe, that the rapidity of the pulse continued and the dyspnœa increased regularly till her death, which taking place, leave was obtained to open her body.

If there be any one part of the detail of this case particularly interesting, it is the history of the dissection; but I regret very much that I shall not be able to do justice to the subject. From the prejudices of the people, amongst whom I have practised, against opening dead bodies, opportunities scarcely ever occur, except in those cases, the symptoms of which are so prominently remarkable as to excite the curiosity of friends as well as the enquiries of the physician. In this case, it was thus obtained, particularly as the mother and husband of the woman were under the impression that her death was occasioned by poison. They not only gave consent, but were anxious to have the cause of her death ascertained. From my inexperience in dissecting, I fear I shall not be enabled to give a lively colouring to description, not having been in the habit of comparing the appearance of healthy and diseased parts; added to these, the dissection was done in haste, and without taking notes of the minute state of the parts exposed by the knife. I trust, however, that I shall be enabled to give a tolerable idea of the nature of the tumour, and its connections, which may lead to an application not altogether uninteresting.

On cutting through the integuments covering the tumour, a very thin firm membrane was found investing it on the ante-



rior surface; the posterior surface was supported and covered by the peritoneum. The tumour adhered closely on each side to the edges of the abdominal muscles, through which it seemed to have protruded, separating and throwing them to each side, and the investing membrane adhered below to the os pubis. The peritoneum on the posterior and upper surface of the tumour was thickened, and those parts of it were harder, and small portions of the mass approached nearly in appearance to scirrhus of the firmest kind. The tumour was a Steatoma; the suetty matter was contained in cysts of different dimensions, from the size of a grape to that of a hen's egg. The colour of the steatoma was various, as the size of the cysts in which it was contained; being in some parts of the tumour of the colour of coagulated blood, and again white, with all the intermediate shades. There was some variety in the consistence of the matter contained, and about a pint of serum was discharged in the course of the examination.

Except the adhesions to the edges of the abdominal muscles, to the pubis, and to the spinous process of each ilium, the mass seemed to have no connection with any other part. The abdominal viscera were quite natural in their appearance, except the liver, which was somewhat increased in size. The left ovarium, the uterus and bladder, were perfectly healthy and natural in appearance and situation. The right ovarium was as large as the gall bladder of an adult, containing thin purulent matter, and almost full of black hair; a part of the hair growing from the internal surface of the organ, the rest loosely lying in the purulent matter.\*

Drs. Cooke, Digges and myself, present at the dissection, computed the weight of the tumour to be between eight and ten pounds.

It is from the dissection satisfactorily proven that this tumour was not what we believed it; and although the fact is remarkable that the right ovarium was singularly diseased, yet, I cannot see much reason for believing the tumour I have described to be connected with that part either in its origin or progress.

\* The Fallopian tubes in a natural state.



I can safely place my opinion of the case before the profession, because I had every reason to believe the disease to be in the ovarium and no where else. The propriety of tapping was evident.

## REMARKS.

The object which every friend to humanity and medical science has in detailing cases, which present uncommon aspects and symptoms, and the morbid appearances of such cases on dissection, is to improve the powers of the healing art. To present them with a view to excite "stupid wonder," or to detail them in a manner which cannot be useful, is alike inconsistent with the philanthropic and philosophic mind. It would be highly gratifying to me, could I be as well persuaded that I had effected the latter, as that I have wished to avoid the former. I have this assurance, that although to present purposes the above case *may* subserve nothing, yet it is a faithful detail, and may prove one of those facts which future observation and intelligence shall apply with interesting effect.

Nor is the relation devoid of interest because it directly leads to no positive conclusion or practical inferences. An accumulation of facts leads to the determination of general principles; and the latter can never be considered as sure unless derived from the former: and I am well persuaded that pathological principles are not more obscure or unsatisfactory in their application to any parts of the human body, than those which belong to the organs of generation in the female sex. Now, to what this consideration will lead, genuine philosophy at once declares; viz. Observe closely the diseases of those parts, distinguishing them from those with which they are apt to be confounded; mark their origin, symptoms, progress, treatment, termination; and in fatal cases, above all, the appearances on dissection; and the experience of all ages, on all subjects presented to the investigation of the mind of man, gives to the diligent observer the most positive assurances that his labour shall not be in vain.

Let us not defeat our own views by aiming at too much. Let one generation be content to lay the foundation by accu-

rate observation faithfully detailed, on which those who come after, may erect a superstructure. Truth, Lord Bacon has observed, is not the child of authority but of time. Nor should we allow apathy or mental indolence to render the object of our pursuit unattainable by believing it to be so: "for were we to allow ourselves to suppose (let the subject be what it may, provided it be liable to experiment) that nothing more or new could be taught, it is pretty clear that nothing more or new would be learnt." Let the halo of professional glory which encircles the heads of Cullen, Hunter, Jenner, Rush, Le Gallois and Davy, offer irresistible inducements to the enquirer after truth, "to climb the steep where fame's proud temple shines afar." And for encouragement we may regard the humble instrumentality which is used to evolve the most important discoveries. That blessing which may be considered second only to Christianity, was suggested to the attentive mind of Jenner by obscure herdsmen: the persevering research of Rush guided him to the successful treatment of the most dreadful epidemic which ever visited our great cities; and the clue was a little communication from a country practitioner in Virginia, who dissected two or three negroes, and accurately described the morbid appearances: and those researches which the National Institute of France justly declare to constitute an æra in physiology, were effected by Le Gallois, in consequence of observing an obstetric case. How powerfully these considerations speak to a mind capable of being influenced, the intelligence of the members of this society will at once acknowledge; and will plead my excuse for presuming to occupy their time by the detail of the above case, and the very imperfect remarks which follow.

Nor should the incurable nature of ovarian disease, if such indeed be the fact, which I doubt very much, bar an inquiry. I repeat, that which contributes most to render practice impotent is a persuasion on the mind, a preconceived notion, that it will prove so; and nothing affords a clearer proof how preposterous it is to cease inquiry, than the result of this dissection. That which was believed to be ovarian disease, was proved not to be so; and if this mode of investigation was



more attended to, and even if one writer in the Eclectic Repository, Dr. M<sup>d</sup>Dowell, had been more considerate in the examination and detail of his cases, and with all due respect I would suggest, that *it is still his duty to be so*, some thing very interesting might have been presented to the profession on this subject.

The motives for prosecuting inquiries as to the nature of such cases are very high. The diseases arising from affections of the female organs of generation are numerous, complex and obstinate; their pathology we are too ignorant of, and their treatment is yet very unsatisfactory.

The first question which presents itself, is, whence the origin of this tumour? I do not believe that it had any connection with the disease in the ovary. Its nature was evidently of the class of encysted tumours called steatoma, which occur so frequently in the cellular membrane. There certainly can be no ground for asserting that it proceeded from the ovary, notwithstanding the diseased state of the latter; although Morgagni mentions one case where the ovary burst, and threw out a steatoma. The ovary in this case was a perfect cyst. Mr. Latta mentions the frequency of steatomatous tumours, on each side of the umbilicus, but never saw one in the middle region. Now, this tumour originated on the side, and might have been more confined to that side but for the evolution of the uterus. Another reason for concluding that it was not connected with the ovary is the rapidity of the growth, for the latter are very slow in their progress. The only arguments for supposing any connection between the two diseases are, that the right ovary was actually diseased, and that we have very good reason to believe that this tumour took its rise about the period of conception; when the left ovary produced the genuine ovum, and the right partaking of the excitement, may have produced the tumour. I do not rest on this at all, and the society will duly appreciate it. I find myself compelled then to believe that there was no connection, and that it formed as steatomatous tumours generally do.

Secondly. It is a very interesting and not an irrelevant inquiry, if there be any diagnostic symptoms of diseased ova-



rium. One of the first reflections which crossed my mind on noting this case, was, that it would be practically useful to collect from various sources, those symptoms which have been considered as pointing to diseased ovarium. I have no doubt that tumours such as I have described, have been repeatedly mistaken for diseased ovarium, and so far a knowledge of distinguishing symptoms is of great importance; because it may be safely affirmed, that whatever may be the scruples as to the extirpation of diseased ovarium, there can be no doubt of the propriety of taking out steatomatous enlargements, with certain acknowledged precautions: The remarks as to this head, will be confined chiefly to the condition of tumours after considerable progress; for we are too seldom called on to examine them at an early period.

When, therefore, we are called on to decide as to the nature of a large tumour, it may be important to keep the following circumstances in view; with them, and a liberal consideration of all the facts in the case, we may hope that Morgagni may yet be mistaken in asserting positively that diseased, enlarged, and dropsical ovaria cannot be decided on.

1. There is a sympathy between the generative organs and stomach which obtains in enlargement of the ovarium, and not in steatomatous tumours of the cellular membrane. I am aware that one or two writers are opposed to this sentiment, but the fact is positively stated by several eminent men; positively as to enlarged ovarium, and no mention do I find made of wens producing any sympathetic affections except by mechanical influence in advanced stages. Ferriar gives a case where there was thirst and scanty urine in dropsy of ovarium.

2. In affections of the ovarium there have been noticed enlargements of the liver, spleen, and pancreas. In the above case the liver was enlarged. In Michener's case the pancreas was much enlarged and scirrhus.

3. In the early stage of enlarged ovaria and steatomatous tumours they are both moveable, but wens are more apt to form adhesions in the advanced stages.

4. Morgagni says, you will more readily suppose disease to be dropsy of ovarium, when the temperature of the body, the diet

and diseases, have been of such a kind as to dispose women to dropsies. Darwin says, they are produced by cold, fear, hunger, and debilitating causes, and gives two cases from the two first mentioned sources.

5. In all cases make an examination *per vaginam*, and attend to the effect which moving the *os uteri* has on the tumour. If the latter is diseased ovary it will move with the former, not so if the swelling be ascites.

6. It is not to be inferred because conception has taken place, that the ovary is not diseased—nor does the presence of catamenia in abdominal tumours always prove that the uterus is not affected. See Baldwin's case, *Med. Mus.* vi. 106.

7. In enlarged or dropsical ovary the lower extremity of the same side is swelled; and Burns observes, that there is pain in the corresponding mamma.

8. Fluctuation is more obscure in dropsy of ovary than in ascites; and in steatoma there is none. When a puncture is made it is found that the fluid in *Hydrops ovarii* is darker than in ascites, viz. of a coffee colour.

9. Ovarian disease most frequently occurs in advanced life, although cases are often seen in young females. Reference need not be made to the situation of the ovaria and the place where they are first discovered to be diseased.

10. In ovarian enlargements there is very frequently an inequality on the surface of the tumour which does not obtain in ascites.

11. Steatomatous tumours, tumours in the mesentery, and ascites are more rapid in their progress than ovarian enlargements.

12. When the tumour is in the mesentery, it will be found that it commences higher up than ovarian disease, that the pains are great in the region of the bowels, and that the strumous habit prevails.

13. The most difficulty must be in distinguishing diseases of the fallopian tubes and ovary—the distinction is not of so much practical importance.

14. Think, if you doubt whether or not the ovary is affected, what other part, a viscus of the pelvis or abdomen



could be so deranged as to produce a tumour which might be confounded with enlarged ovarium.

In this desultory sketch of diagnostic symptoms, I have merely wished to call the society to reflect on this subject. I am sensible of its imperfections and of the difficulties attending the inquiry; but I believe under no one head will be found arranged so general a collection of distinguishing symptoms. This may facilitate future enquiry, and very much is required on this interesting subject. I have referred to negative evidence: on this it may be well to recollect and refer to Pemberton's excellent observations on its importance. It is certainly so much accomplished in a difficult enquiry to ascertain where a disease is not situated, or that it is not of a particular kind.

How far a knowledge of the causes, seat, and nature of diseased action goes to improve the treatment of cases, I need not stop for a moment to enquire; but will conclude with a few desultory, imperfect practical observations on the treatment of ovarian disease and steatomatous tumours.

Boerhaave says a dropsy of the ovarium is never cured. How true this assertion is we will now enquire. Mr. Percival records a case of cure of disease of ovarium by vomiting. Ferriar gives a case where an entire cure was performed by gamboge and spir. nit. dulc.; and another where great relief was given by crem. tart. and gamboge. Denman says he has met with several very unexpected cases of cure. These coming from such unquestionable authority, certainly are entitled to be set in opposition to Boerhaave, who stands alone in this positive declaration, at least so far as my researches inform me. I have purposely avoided noticing particularly the remedies recommended in the cases.

There is however another mode of treatment which promises more in ovarian and steatomatous cases; viz. the surgical treatment either by puncture or extirpation. It is advised in cases of collections in the ovarium to puncture with a large canula, for a very obvious reason; and I would suggest the safety and consequent propriety of making a puncture or small incision where there is any doubt as to the nature of the con-



tents. It is no objection that Morgagni urges that paracentesis ovarii is not to be done because of the cellular nature of the contents: for although the operation may fail, yet it will not endanger the patient, and proves satisfactory to the surgeon.

Can an ovarium be extirpated, and the woman recover? I believe this question may very well be answered by enquiring whether there is any doubt of that fact. It may be confirmed by the practice of rude hands on tender animals; it is confirmed by analogy derived from operations on parts of the human body more essential to life, and it is established by actual experience. For there is authority which is within the reach of every member of this society to this point. Cases are on record where the operation has been done on monstrously enlarged ovaria; and if practicable under those circumstances, surely there can be no doubt but that in the earlier stages before the health is impaired, and before the danger from extensive exposure of cavities, that the operation will prove successful. Here, then, the importance of diagnosis is manifest. Let the surgeon be satisfied that the tumour is ovarian, that the most fair and effectual trial has been given to medicine, that the tumour has no forbidding attachments or adhesions, and that it is on the increase: then the question must be decided on these grounds, whether *the uncertainty of diagnosis and the danger from the operation, are equal to the results which almost invariably obtain from suffering the tumour to enlarge and terminate spontaneously*. I believe the operation would be decided on.

The propriety of extirpating a steatomatous tumour, such for example as the one I have this day read of to the society, is still more obvious. Who can doubt, from the state in which it was after delivery, of the safety and certainty, with which an attempt might have been made to extirpate it? And an examination of those cases where immense quantities of suetty matter have been evacuated by incision, and recoveries have ensued, gives great encouragement to the bold, yet skilful operator.

Houston records a case, where from an incision one inch in

length, astonishing quantities of steatomatous matter were discharged from a tumour, and the woman recovered. Some French surgeons have operated under circumstances which did not promise much, and their boldness was crowned with success. But a communication more to our purpose, than any to be found, is made in the Eclectic Repertory, vol. vii. p. 242, by Dr. M'Dowell; and which has been the subject of some remarks from Dr. Michener, in the same work, vol. viii. p. 111. While I unite with the latter gentleman in expressing my *deep regret that a more particular detail has not been presented of these remarkable cases*; yet, in one point of view, they are completely satisfactory in proving that an operation may be successful in cases which have, I fear, too frequently been allowed to proceed undisturbed to a fatal termination. In all such cases it may be observed, that two considerations must weigh with much importance on the surgeon's mind, viz.

1st. The connections which the tumour may have formed.

2d. The state of the patient's general health.

Let the surgeon reflect on the progress which has been made within the last century, in distinguishing the seats and characters of internal diseases: let him contemplate the astonishing powers which the constitution manifests in restoration from injuries: let him exercise the same decision in the use of the knife which Dr. M'Dowell displayed, and that research in all fatal cases, which Dr. Michener manifested in enquiring into the cause and seat of the diseases, and the latter gentleman will probably live to see the time when he will with pleasure acknowledge the inapplicability of the views held out in his last paragraph, to the power of the surgeon's discernment and the effect of his knife.



## MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

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*Muhlenberg's Grasses and Flora.*

[From the New England Journal of Medicine and Surgery, for Jan. 1818.]

Mr. S. W. Conrad, of Philadelphia, has published the posthumous work of the late Dr. Muhlenberg, on the American grasses. It constitutes an octavo volume of three hundred pages, and contains minute botanical descriptions of the grasses, and of plants allied to them, found within the United States. The work is written in Latin, and being destitute of the common claims to popular favour, it must depend on its own intrinsic excellence for patronage. We can have no better evidence of the maturity of science among us, than the support given to works of this character. We trust there are botanists enough in this country to appreciate correctly a production, which fills a chasm in our natural history, and throws light on an important, but difficult order of vegetables. In the preface to this book, the editor announces another work of the same distinguished botanist, about to be printed from the manuscripts he has left. This is the *Flora Lancastriensis*, a full account of the plants in and about Lancaster in Pennsylvania. This Flora will doubtless be more extensive than its name indicates, and will probably present a good view of the botany of the middle states, like that given by Mr. Elliott of the southern states. Among other things, we understand it will contain the characters of all the cryptogamous plants named in Dr. Muhlenberg's catalogue, the knowledge of which is at present a great desideratum. In botanical knowledge, experience, and accuracy, Dr. Muhlenberg had no superior in America.



*Sulphate of Zinc recommended as a remedy in Psora, by DR. and PROF. HARLES, of Erlangen.*

[From the same work, for April, 1818.]

SULPHATE of Zinc, or white vitriol, has hitherto not been recommended as an external remedy in psora, except in the form of an unguent, as in the Ung. antiscabios. Jasseri; in this form however it does but seldom answer our expectations, from the same reason, that other powerful remedies do frequently disappoint us in curing this disorder.

Dr. H. has had a vast number of scabious patients in the clinicum at Erlangen, and consequently had ample opportunities, to try and compare the effects of a great variety of such remedies, whose effects had been particularly praised on different occasions.

Sulphur given internally as well as externally, in the dry and simple itch, did not only frequently disappoint both the Dr. and the patient, but generally did no service at all, in the pustulous and wet dartsous itch. The cure was generally too tedious; the exantheme reappeared with increased strength, after being seemingly cured, and got even worse instead of better.

Of the external application of the well known mercurials, the solution of sublimate, and the Ung. Werlhoffii, and particularly of the former, Dr. H. saw sometimes good effects, they appeared however in the inflammatory state of the exantheme, and in plethoric and irritable habits, to act rather prejudicial, by increasing both pain and inflammation. Besides this, the process of absorption is to be regarded, on which account those remedies must not be continued too long.

Tartarized antimony Dr. H. has but twice made use of externally, in a herpetic itch, once in a watery solution, and once as ointment, but was soon forced to give it up, on account of the disorder getting worse.

As to the use of the diluted sulphuric acid, he found that this remedy is not only very slow in its operation, and that it sometimes entirely disappoints; but also that its being appli-

cable can be but very limited, as it can be applied with good effect, only when a general debility of the lymphatic and cuticular system, together with cacochymy, prevails.

The treatment with an aqueous solution of soap, he considers to be a very good adjuvans, in cures of simple itch, but alone, it is in most cases of no greater service than the decoctions of mucilaginous, or mucilaginous-astringent vegetables, of which elm bark is the most useful.

Among the acrid vegetables Dr. H. has hitherto given the preference to the Elecampane in saturated decoctions, in the form of a wash, yet he thinks it far less efficacious, than the analogous remedies of the mineral kingdom, particularly white precipitate of quicksilver, sublimate, diluted ley and soap.

The result of all his experiments and observations was, that none of these remedies acted so quick as might be wished, and a watery solution of sulphate of zinc used as a wash, was always found the best. Dr. H. has used this remedy in more than forty of the most different cases, and always with a speedy and perfectly good success, and without any further consequences. The eruption did not, as is the case with the other remedies, increase in the beginning, but decreased from the very first days, and was generally completely removed after a perseverance of eight or ten days. Only in a rather inflammatory form of the pustulous itch, this remedy could not be applied, for the same reason, as it cannot be indicated in syphilitic itch.

If the disorder has been of long standing, a few mild purges being previously given, the patient takes for a few days some sulphur and cream of tartar, and after this, all the places, where there is any eruption, are washed twice or thrice a day with the following wash:

R Sulphatis Zinci ʒj. ad ʒij.

Decoct. ulm. ʒiss. ad ʒij. M.

The proportion of the white vitriol was but in very few instances increased. In very recent and slight cases, the wash was employed without any previous preparation; warm baths are often employed at the same time.



This method is also to be recommended on account of its cheapness, a point deserving particular notice in civil and military hospitals, where the disorder spreads in an uncommon manner.—*Continental Medical Repertory.*

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The following interesting letter from Doctor JENNER should have appeared in another part of the Eclectic Repertory, had it been received in time. It was written in answer to the enquiries of one of our fellow-citizens, who was desirous to know Doctor JENNER's *present* sentiments on the preventive powers of Vaccination against Small-Pox, and is deemed of too much importance to be delayed until the publication of our next number.

To WM. DILLWYN, Esq. *Higham Lodge, Walthamstow, Essex.*

DEAR SIR,

It is a curious and most delightful fact, that while the disputations you allude to are here and there going on among individuals, with regard to the efficacy of Vaccination, the small-pox is flying before it in all directions. In a wide district around me, embracing the most populous part of the county of Gloucester, which abounds with manufactories, the small-pox is scarcely ever heard of; and if it does happen to appear from infection brought by the wandering pauper, it either finds itself insulated, or is rendered incapable of spreading, by giving immediately the vaccine security to those within its atmosphere who may happen to remain unprotected. In these few words, sir, I think I have answered the main part of your letter; but I will add a few more; and you have my full consent to transmit what I say to your friends either on this or the other side the Atlantic. Wherever Vaccination has been *universally* practiced, there the small-pox ceases to exist. It matters not how wide the district or how populous the city, the result is, and, from the nature of things, must be the same. There is scarcely any part of the civilized world that cannot bear testimony to the truth of this position. For extent of territory, we may turn our eyes to our possessions in the East, and to various parts of South America; and to



towns and cities, many of the most conspicuous in Europe. As a cheering document, with regard to the extinction of the small-pox throughout a kingdom, I shall take the liberty of enclosing the report from Sweden.\* Now, as the good sense of the Swedes directed them to employ Vaccination for bringing about this great event, why should not Britain avail herself of this great gift, and employ it in a similar way? Here the Boon is distributed with a partial and sparing hand, and consequently the small-pox still exists in several parts of our island. However, I have the happiness to say, that since the first promulgation of my discovery, in the year 1798, the deaths by small-pox in the British realms, according to the best estimate I can form, are reduced from more than 40,000, to less than 6,000. The metropolis for the last ten or twelve years exhibited a reduction of about one half only; but during the last two years, Vaccination has been more extensively practiced than ever, both from the benevolence of private individuals of the Faculty, and the public institutions; and this year promises a far greater reduction in the number of deaths than any that has preceded it. You may, perhaps, at the India House, have acquaintances who will furnish you with copies of their reports from Calcutta, Bombay and Madras. A copy of one of these I have enclosed, that it may be seen with what vigour the new inoculation was prosecuted in a country too distant for the approach of prejudice. In the island of Ceylon, the ravages were dreadful, although many efforts had been made to lessen its fatality by variolous inoculation. This, wherever it was practised, produced a spreading of the disease, and made a bad matter worse; so that the people would have nothing to do with it. But after a little time, they took to the vaccine very readily; and by referring to Dr. Christie's publication on the subject, which you may find at any of the medical booksellers, you will observe that the small-pox became totally extinct. However, in spite of glaring facts of this description, I must candidly acknowledge, I am not at all surprised, that both in our country and in other parts of the

\* Published in the fifth Volume of the Eclectic Repertory, 1815. *Ed.*

world, a partial prejudice should now and then lift up its head. It is called into existence, not from any thing faulty in the principle of Vaccination, but from a wrong and injudicious application of that principle. For example, a child or a family of children, may be in such a state that the action of the vaccine fluid when applied to the skin, shall be either wholly or partially resisted. It may either produce no effect at all, or it may produce pustules, varying considerably in their rise, progress, and general appearances, from those which have been designated by the term *correct*. It was about the year 1804, that I was fortunate enough to discover the general cause of these deviations, and no sooner was it fully impressed on my mind, than I published it to the world. Though all may have access to the paper\* with the greatest facility, yet few, very few indeed, among those who vaccinate, have paid any attention to it; yet I am confident from a review of the practice on an immense scale, and through a period of more than twenty years, that it is a matter which has a greater claim on our attention, than any one thing besides connected with Vaccination—indeed I may say than every other thing. What I allude to is a coincident eruptive state of the skin, principally bearing what we call the herpetic or irritative character. If we vaccinate a child under its influence, we are apt to create confusion. The pustule will participate in the character of the herpetic blotch, and the two thus become blended, forming an appearance that is neither vaccine nor herpetic; but the worst of it is, that the patient does not receive that *perfect* security from small-pox infection, which is given by the perfect pustules. It by no means always happens that the appearance of an eruption of this, or any other description, prevents security; but it is so commonly the case, that I cannot too much enforce the necessity for rigid attention in the inoculator, whenever a child is presented to him for vaccination, under such circumstances. If the case admits of no delay, these irritative affections of the skin should be removed at once; which may be done with ease,

\* A copy may be found in the London Medical and Physical Journal, for the month of August, 1804.



and the most perfect safety, when they are not very numerous and of long standing; medicine in that case may be necessary in conjunction with an application. But on this subject I need not enlarge, as it is more particularly spoken of in the paper referred to. However, I may now just say, that the application I make use of for destroying these eruptions, is the unguentum hydrargyri nitrati of the last London Dispensatory.

One word more with respect to prejudice. How frequently have we seen, in a variety of the public prints, paragraphs of this description—"A gentleman's family, consisting of three or four or half a dozen children, were vaccinated by an eminent surgeon, and all went through the disease in the most satisfactory manner, and were pronounced safe; yet, on being exposed to the infection of the small-pox, they all had the disease, but happily they all recovered." Here, sir, the mind becomes entangled with a false association. The public conceive, that an *eminent surgeon* must be a perfect master of this little branch of our art; but it often happens that he has not stooped to look at any thing beyond its outline; and when deviations arise in the progress of the pustules, to that extent which I have pointed out as momentous, they pass by without attracting any particular attention.

Pray excuse me—I find myself spinning out my letter into an essay, and at last was like to have forgotten the most important part of your inquiry, namely, "whether I myself had not renounced my opinion of the efficacy of Vaccination." This question has been often put to me—why? I cannot conceive. It came not long since, through a medical friend of mine in London, from a very respectable lady in the country, whose children had been vaccinated. I know not how to give you more complete satisfaction on this point, than by a quotation from the letter written to my medical friend in reply.

"The ghost that has appeared to Mrs. C. has taken an annual stalk over the country for these ten years past. I find no great difficulty in laying it; but I cannot give it final repose; the phantom will rise again in spite of me. If you will look over your records relating to Vaccination in Ireland, you will find, by one of the annual reports distributed by Dr. Labatt,



that this spirit appeared in Dublin not many years since, and made many furious menaces, disturbing the tranquillity of some of the inhabitants of that fair city. There you will see a letter of mine written to the doctor, so much in point with regard to Mrs. C.'s enquiry, that really I cannot add any thing to it, as my opinion of the powers of Vaccination is precisely the same now as it was then. Indeed, if it had wanted strength at that time, it has since obtained it most abundantly. I beg then that you will let Mrs. C. know, *my confidence in the efficacy of the Vaccine, to guard the constitution from the small-pox, is not in the least diminished.* That exceptions to the general rule have appeared, and that they will sometimes appear, I am ready to admit. They have happened after small-pox inoculation; and by the same rule, as the two diseases are so similar, should they not happen after the Vaccine?"

Believe me, dear sir, with great respect,

Your obt. and faithful servant,

EDW. JENNER.

Berkeley, Gloucestershire, }  
19th August, 1818. }

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*Method of reducing Hernia in Russia.*

JOHN CONRAD HILTEBRANDT on a kind of large dry cupping machine, used by the Russians for reposing incarcerated ruptures. They take a pot capable of holding about a few pounds of liquid, stop up the hole it has got at the bottom with a cork, rarify the air contained in it by lighted tow, and put it along with the burning tow upon the abdomen, previously rubbed with oil or soap. Thus the abdominal parietes and bowels are, not without pain, drawn into the pot, and the parts contained in the rupture into the abdomen. The pot is removed by drawing the cork, and if the effect is not yet complete, the pot is again replaced. This popular remedy, the author, like many other physicians, has found very efficacious and harmless. He cured with it incarcerations, where vomit-

ing and singultus had already taken place, where the pulse was quick, hard and small; and where the operation was going to be resorted to, other remedies having been found ineffectual. In an inflammatory state, blood should be drawn first; in lusty, dropsical or pregnant people, this method finds no application. The common Russians, however, make also use of it in childbed, hæmorrhages and spasms; which, according to their theory, they derive from an irregular position of the uterus.

*Continental Medical Repertory.*

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*Newly discovered Membrane in the Eye.*

24, Aungier Street, Dublin, June 13, 1818.

Doctor Jacob, Demonstrator of Anatomy in the University of Dublin, has discovered, and demonstrated in his lectures on the diseases of the eye, this spring, a membrane covering the external surface of the retina, in man and other animals. Its extreme delicacy accounts for its not having been hitherto noticed. He arrived at the discovery by means of a new method of displaying and examining this and other delicate parts. He argues from analogy, the necessity of the existence of such a membrane, as parts so different in structure and functions as the retina and choroid coat must otherwise be in contact, in contradiction to the provisions of the animal economy in general. A detailed account of the discovery, with the method of displaying the membrane, is in preparation, and will shortly be laid before the public.

*Journal of Science and the Arts, No. X.*

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*On a Mode of preserving some Vegetable Remedies.* By MARSHALL HALL, M. D.

It is an object of much regret, that all the modes of preparing vegetable remedies hitherto employed are defective, and that no mode of preserving these substances with their virtues unimpaired, should have been discovered. Sometimes



the process of preparation injures the virtues of the remedy, or extracts them partially only; in other cases, their subsequent preservation is imperfect. Dried vegetable remedies, extracts, tinctures, infusions, and decoctions, are all liable to one or more of these objections.

Might not some of the vegetable remedies be preserved without subjecting them to any previous process, or to the action of any external agent, by which their virtues are partially destroyed, or only partially extracted? In the case of digitalis, cicuta, hyoscyamus, &c. the writer has taken the fresh herb, collected free from dew, and having rubbed the leaves into the finest pulp, he has simply formed a properly consistent mass, by the addition and careful intermixture of *white sugar*, or of *dried soap*. In this manner the vegetable may be long preserved; and the advantages are obtained of administering it throughout the year in its pristine state, and without previously subjecting it to any operation, or to the agency of any substance by which its properties might be enfeebled or destroyed. It must remain to be decided which of the two modes is the preferable one, and whether each may not be better adapted than the other, for the preservation of particular substances. Either compound may be formed into pills, or mechanically suspended in a draught or mixture.—*ib.*

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*On the Moiré Metallique, or Fer blanc moiré.*

This is an article of Parisian manufacture, much employed to cover ornamental cabinet work, dressing boxes, telescopes, opera glasses, &c. &c. and is prepared in the following manner.

Sulphuric acid is to be diluted with seven or nine parts of water, then dip a sponge or rag into it, and wash with it the surface of a sheet of tin, which speedily will exhibit an appearance of crystallization, which is the Moiré.\*

This effect, however, cannot be easily produced upon every sort of sheet tin, for if the sheet has been much hardened by

\* The word Moiré signifies *watered*, as La Soie Moirée, *watered silk*.



hammering or rolling, then the moiré cannot be effected until the sheet of tin has been heated so as to produce an incipient fusion on the surface, after which the acid will act upon it and produce the moiré. Almost any acid will do as well as the sulphuric, and it is said that the citric acid dissolved in a sufficient quantity of water, answers better than any other.

The moiré has of late been much improved by employing the blow-pipe, to form small and beautiful specks on the surface of the tin, previous to the application of acid.

When the moiré has been formed, the plate is to be varnished and polished, the varnish being tinted with any glazing colour, and thus the red, blue, green, yellow, and pearl coloured moirés are manufactured.—*ib.*



*Pennsylvania Hospital.*

Patients remaining in the house, April 26th, 1817,	181
Admitted from that time to April 25th, 1818,	638
	—819
Of these the number cured is . . . . .	385
relieved . . . . .	93
removed . . . . .	55
women safely delivered . . . . .	17
infants born and well . . . . .	11
discharged disorderly . . . . .	3
eloped . . . . .	18
dead . . . . .	63
remain . . . . .	174
	—819

*College of Physicians of Philadelphia.*

JULY 7TH, 1818.

## OFFICERS OF THE COLLEGE ELECTED.

PRESIDENT,

*Doctor Thomas Parke.*

VICE PRESIDENT,

*Doctor Samuel P. Griffitts.*

CENSORS,

*Doctor William Currie,**Thomas T. Hewson,**Plunket F. Glentworth,**Henry Neill.*

TREASURER,

*Doctor Thomas C. James.*

SECRETARY,

*Doctor Joseph Parrish.**University of Pennsylvania.*

SEPTEMBER 1, 1818.

The Medical Lectures will commence as usual on the first Monday of November.

Anatomy, . . . . .	DR. DORSEY,
Surgery, . . . . .	DR. PHYSICK,
Practice of Physic, . . . . .	DR. CHAPMAN,
Materia Medica, . . . . .	DR. COXE,
Midwifery, . . . . .	DR. JAMES,
Chemistry, . . . . .	DR. HARE.

*Meteorological Observations made at Augusta, Georgia, from  
January 13, to September 30, 1817.*

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*January.*

Thermometer—Lowest in the morning, 12—19th day of the  
month,  
Highest, evening, 66—21st do.  
Mean, 40

*February.*

Thermometer—Lowest in the morning, 28—6th day of the  
month,  
Highest at 2, P. M. 68—20th do.  
Mean, 45  
Snow on the 4th—Generally fine weather.

*March.*

Thermometer—Lowest in the morning, 32—2d day of the  
month,  
Highest at 2, P. M. 80—25th do.  
Mean, 50  
Thunder, the 12th—Little rain—Clear weather.

*April.*

Thermometer—Lowest in the morning 50—1st day of the  
month,  
Highest at 2, P. M. 84—9th do.  
Mean, 72  
Clear weather—One heavy rain.

*May.*

Thermometer—Lowest in the morning, 58—11th day of the  
month,  
Highest at 2, P. M. 86—24th do.  
Mean, 75  
Some rain.



*June.*

Thermometer—Lowest in the morning, 69—11th day of the month,

Highest at 2, P. M. 85—8th do.

Mean, 77

Frequent rains.

*July.*

Thermometer—Lowest in the morning, 62—18th day of the month,

Highest at 2, P. M. 94—7th do.

Mean, 78

Much thunder and lightning, with rain—Intermitting fever the prevailing disease.

*August.*

Thermometer—Lowest in the morning, 63—27th day of the month,

Highest at 2, P. M. 92—19th do.

Mean, 80

Some heavy rains—Almost every rain attended with thunder and lightning this season—Very unhealthy this month—more so than for many years; as well at Augusta as in the adjacent counties—Bilious intermittents and remittents very prevalent.

*September.*

Thermometer—Lowest in the morning, 55—28th day of the month,

Highest at 2, P. M. 95—10th do.

Mean, 75

Beginning of the month becoming more healthy, though still very sickly and number of deaths alarming—Not much rain.

## LIST OF RECENT EUROPEAN PUBLICATIONS.

## CHEMISTRY.

A Treatise on the General Principles of Chemical Analysis. Translated from the French of L. J. Thenard, by Arnold Merrick, 8vo.

## MEDICINE, SURGERY, ANATOMY, &amp;c.

Edinburgh Medical Journal, No. 55.

A Memoir on the Congenital Club Feet of Children, by Antonio Scarpa, with five Original Engravings, by Anderloni. Translated from the Italian, by J. H. Wishart, Fellow of the Royal College of Surgeons.

Practical Observations on the Action of Morbid Sympathies; as included in the Pathology of Certain Diseases, &c. By Andrew Wilson, M. D.

Practical Observations on Continued Fever, especially that form existing as an Epidemic, &c. By Robert Graham, M. D. Glasgow.

Modern Maladies, and the Present State of Medicine; the Anniversary Oration, delivered March 9, 1818, before the Medical Society of London. By D. Uwins, M. D.

Results of an Investigation respecting Epidemic and Pestilential Diseases, including Researches in the Levant. By Dr. Maclean.

Practical Illustrations of the Scarlet Fever, Measles, Pulmonary Consumption and Chronic Diseases, termed Nervous, Bilious, Stomachic, and the like. With Observations on the Effects of Sulphureous Waters in Various Complaints. By John Armstrong, M. D. 8vo.

A Practical Enquiry into the Causes of the frequent Failure of the Operation of Depression and the Extraction of the Cataract, as usually performed. With a Description of a Series of New and Improved Operations. By Sir William Adams, 8vo.

Surgical Observations: being a Quarterly Report of Cases in Surgery. By Charles Bell, Surgeon of the Middlesex Hospital, Vol. II. Part I. 8vo.

An Attempt to estimate the Power of Medicine in controlling Fever. By William Brown, M. D.

An Essay on the Symptoms, Causes and Treatment of Inversio

**Uteri.** With a History of the Successful Extirpation of that Organ, &c. By W. Newnham, Surgeon, 8vo.

**Practical Observations on the Treatment of the Diseases of the Prostate Gland.** Illustrated with Plates. By Sir E. Home, Vol. II. octavo.

**Report of the London Committee for Curing the Diseases of the Eye.**

**Armstrong on Typhus Fever,** 8vo.

**A Treatise on Tetanus and Hydrophobia.** By J. Reid, Esq. 8vo.

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**Observations, with Cases illustrative of the Sedative and Febrifuge Powers of Emetic Tartar.** By William Balfour, M. D.

**An Account of the Life, Writings and Character of the late Dr. Alexander Monro, Secundus.** Delivered at the Harveian Oration of Edinburgh. By Andrew Duncan, senr. M. D.



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